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Original Articles.

FEDERAL CONTROL OF DRUGS.*

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The Congress of the United States has authorized two kinds of investigations into the character of drugs. The term "drug," as used in the acts of Congress, may, I think, very properly be interpreted to mean any remedy intended for internal or external use. In fact, the regulations, as will be referred to later on, made under the provisions of this law, recognize this as its fundamental meaning. It may, perhaps, be surprising to many of you to know that one of the existing laws relating to the inspection of drugs was enacted by Congress on the 26th of June, 1848. This law is found in Section 2,933 et seq. of the revised statutes. The first section of the law provides that "All drugs, medicines, medicinal preparations, including medicinal essential oils and chemical preparations used wholly or in part as medicine, imported from abroad, shall, before passing the custom house, be examined and appraised, as well in reference to their quality, purity and fitness for medicinal purposes as to their value and identity specified in the invoice." The regulations made by the Secretary of the Treasury under this act, and which are now in force here, are found on pages 461 et seq. of the Customs Regulations of the United States, edition of 1899. I will not unduly increase the length of this paper by quoting to any extent from the law in question or from the regulations established. It may be, however, interesting to know that drugs imported from Scotland shall be judged as to their purity by the pharmacopeia and dispensatories of Edinburgh, and the drugs imported from England, France and Germany are in like manner to be judged by the standards of those countries. All other drugs are to be judged by the standard established by the United States. An important feature of the law on adulterations of drugs is the extension of this examination to patent and secret medicines. There are no standards, of course, for these in any of the pharmacopeias, and, therefore, they are judged on their own merits. Article 1,287 of the regulations prescribes: "Patent or secret medicines are subject to the same examination and disposition as other medicinal preparations, and can not be permitted to pass the custom house for consumption, but must be rejected and condemned unless the special examiner be satisfied, after due investigation, that they are fit and safe to be used for medicinal purposes."

In the case of opium it is provided that its importation by Chinese subjects is absolutely prohibited. The execution of the law relating to the inspection of imported drugs is conducted chiefly at the port of New York; but, of course, similar investigations are made at the other ports. During the year 1903 an abstract of the work accomplished at the port of New York in the inspection of drugs was furnished the Senate by the Secretary of the Treasury in response to a request therefor from the committee on manufactures. This abstract may be found in the *Oil, Paint and Drug Reporter*, April 25, 1904, page 28C. From this abstract, among other things, it is learned that of 44 samples of opium examined, 9 fell below the standard for morphia, viz., 9 per cent. The same report shows that large numbers of imported remedies contain alcohol. The minimum and maximum quantity found ranged from 5.45 per cent. in "Ischirogeno" to 76.6 in "Eau des Jacobins." Many proprietary and other remedies were also examined, but the details of the analyses are not very full. For instance, a remedy known as antitusin is described as a "hypnotic and calmative in ointment." Again, antiopium pills are described as containing starch, reducing sugars, extractive matter, cellulose and 3.5 per cent. of ash. There is not time nor space here to enter into the details of the valuable work which the Treasury Department is doing in the inspection of drugs. Any member of the Association interested particularly in the matter can get further information by addressing the Treasury Department.

The work of the Department of Agriculture is carried on under the provision of law embraced in the act making appropriations for the Department of Agriculture, authorizing the Secretary of Agriculture "to investigate adulteration of foods, condiments, beverages and drugs." And the further section authorizing the Secretary of Agriculture "to investigate the adulteration, false labeling or false branding of foods, drugs, beverages, condiments and ingredients of such articles." It will be seen that the authority conferred on the Department of Agriculture by the above sections relates solely to the investigation of drugs and medicines, and not to any inspection or control thereof. There is, however, a further section in the law just referred to, which authorizes the Secretary of the Treasury, at the request of the Secretary of Agriculture, to exclude from the ports of the United States foods, drugs, beverages, condiments and ingredients of such articles which "the Secretary of Agriculture reports to him have been inspected and analyzed and found to be dangerous to health, or falsely labeled or branded, either as to their contents or as to the place of their manufacture or production, or which are forbidden entry or to be sold in the countries in which they are made or from which they are exported."

In view of the fact of the rigid and effective inspection of drugs at the ports of entry by the Secretary of the Treasury, the Secretary of Agriculture has not

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Pharmacology, and approved for publication by the Executive Committee: Drs. C. F. Butler, Solomon Solis-Cohen and O. T. Osborne.

deemed it advisable to institute a similar inspection, which, at best, could only be a duplication of what the treasury officials are already doing. For this reason the authority above conferred has been exercised by the Secretary of Agriculture only in respect of foods, beverages, condiments and ingredients thereof. In order to better provide for the work authorized under the law above quoted, the Secretary of Agriculture has organized in the Bureau of Chemistry a drug laboratory for the investigation of the purity, adulteration, false labeling and false branding of drugs. This laboratory is working in full sympathy and collaboration with the American Pharmaceutical Association, and especially with the committee on drug adulteration of that body. It is true that the chief of that laboratory, with the two or three assistants that he has, can not be expected to go over the whole ground of drug adulteration with any degree of rapidity. The best that can be done in this matter is to take up for special investigation those subjects which seem to demand particular attention. Although this laboratory has been established only a year and a half, it has nevertheless accomplished a large quantity of work, and one bulletin embodying its investigations has already been published. This publication is known as Bulletin No. 80 of the Bureau of Chemistry, and those interested in its contents can secure copies by addressing a request to that effect to the Secretary of Agriculture. This bulletin contains three separate reports of investigations, viz.:

1. Inferior drugs and insidious methods of deception.
2. Rose geranium oil and its substitutes.
3. Phenacetin—methods of analysis and commercial status.

The introduction to this bulletin will give a general idea of the character and utility of its contents:

> The first two articles of this bulletin set forth the conditions that prevail, not only in relation to individuals, but also in some of the best-regulated laboratories. There is a continual cry for cheaper drugs, and in the effort to meet this demand and at the same time make a profit adulteration has spread. The members of the pharmaceutical profession of high standing, however, are anxious to remove from the trade any odium due to adulteration which at present exists.
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> The third paper deals with the medicinal remedy phenacetin, which, according to reports, has been largely adulterated in this country, and many substitutes offered therefor. This subject was studied because of the great interest that exists concerning it in both the medical and the pharmaceutical world, many druggists and physicians being directly involved in the controversy. The fact that phenacetin is sold for 15 cents an ounce in Canada, while $1 or more is charged for the same amount in the United States, creates an impression, correct or incorrect, of injustice. The conditions set forth concerning phenacetin are, moreover, typical of those affecting a large number of patented medicinal remedies. Furthermore, the attempts that have been made to secure such changes in the patent laws as would eliminate these disturbing factors have not been successful. It is hoped that the contents of this paper will place the whole situation before the public in a just and impartial manner.

Another important line in which federal inspection of drugs is conducted is in the collaboration of the Department of Agriculture with the Postoffice Department. The laws regulating the transmission of dangerous, fraudulent and deceptive matters through the postoffice are very stringent, and under these laws the Postmaster General has the right to exclude from the mails articles which, in his opinion, are contrary to the provisions of existing laws. The Congress of the United States has authorized the Bureau of Chemistry of the Department of Agriculture to undertake investigations along chemical lines which may be asked for by the heads of other departments. This authority is found in the following provision of the law:

> Authorizing the Bureau of Chemistry to continue the collaboration with other bureaus and divisions of the department desiring chemical investigations, and to collaborate with the other departments of the government whose heads request the Secretary of Agriculture for such assistance, and for other miscellaneous work.

Under this authority numerous investigations have been made at the request of the Postmaster General of secret remedies, nostrums and other bodies of this class offered for transmission through the mails, or the advertisements for which are offered for transmission through the mails. A large part of the activity of the drug laboratory during the past year has been taken up with these investigations, and as a result of them a number of fraud orders has been issued by the Postmaster General, excluding from the mails the nostrums investigated. It is seen, therefore, that the laws of the United States do afford some protection to its people in regard to alleged remedies of this class, both in providing inspection at the ports of entry for such articles and by controlling their circulation or advertisements thereof through the mails. It is evident that but little more than local business could be done by any secret nostrum of a fraudulent nature were it not for the medium afforded by the United States mails for scattering the advertisements thereof and sending the samples themselves.

I need not enter into any argument here of the benefit that would accrue to the medical profession by a proper regulation of secret alleged remedies. If remedies have real merit, or any merit of any kind, inventors of them have a right to be protected in their discovery, and this right is fully provided for by the laws relating to patents, copyrights and trade marks. On the other hand, if such alleged remedies are fraudulent in their very nature and their sale is promoted by deception in advertising, the control and abolition of such abuses is certainly to be commended.

From the above outline of what federal legislation has done and is doing, it is seen that a control and an inspection of substances used as drugs have been fully inaugurated. It is true that this control and inspection are by no means perfect or universal, but in so far as they go they are certainly useful and commendable. In the interest of the medical profession, of the pharmaceutical profession and of the public, it is hoped that federal control of drugs in general may become more universal and more efficient. In this way the interests of the two great professions mentioned, and of the public, can be best conserved.

THE FORTHCOMING PHARMACOPEIA.*

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The interest which the members of the American Medical Association have taken in the new Pharmacopeia, numerous letters which have been received from physicians throughout the country, and a request from the Section on Pharmacology for this paper, are good and

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sufficient reasons for giving information about the new book which is being printed.

Exceptional activity in providing therapeutic agents for the alleviation of disease has made the work of the Committee of Revision much greater than ever before, and it has been a task to make a judicious selection of the synthetics. Every physician must regard the present condition as confusing in the extreme, for no sooner has he commenced to learn the real value or worthlessness of a new synthetic than he is importuned to try another. The enormous financial returns from the exploitation of some of these products has been, of course, the moving cause for this condition. The committee has had to consider the question of copyrights, trademarks and patents, and to have accepted every one which has been strongly recommended by some physician as valuable would have not only overwhelmed the book and produced hopeless confusion, but a new revision would have been necessary within a year.

It is one of the principal functions of the Pharmacopeia to select only the substances which have proved their value by repeated clinical trials, and have gained the confidence of a large number of discriminating practitioners. Those who are interested in the financial success of the new agent, or who are employed to write up its merits, can not always be trusted to give unbiased information.

Among the important questions with which the present committee has had to deal is that of the standards for purity. In the Pharmacopeia of 1890 there are standards which have been found, by actual practice, far too rigorous and hypercritical. There is no necessity for prescribing chemical salts which are microscopically or analytically free from harmless substances (provided always that the amount of such be accurately known and a proper allowance be made), and when it is considered that in some cases the cost of manufacturing such products adds 100 per cent. or over to the price, the condition calls for immediate action. Chemical testing has reached a stage of far greater accuracy than ever was believed possible, and methods can now be employed which will determine the percentage of contamination with great precision.

The food and drug laws in the various states have been a moving power within the last few years, in calling greater attention to deviations from the standards of the Pharmacopeia, but those who have instituted prosecutions have, in many cases, chosen absurd subjects as the basis of what might be properly called "persecutions," and have permitted far weightier infractions of the law to pass unnoticed. Pharmacists have been forced to pay penalties for trifling deviations, and large manufacturers and wholesale dealers have often been severely let alone. When the food and drug laws are wisely and efficiently administered, they will prove of immense value to the country by punishing a class of druggists who regard cheapness rather than quality as of the first importance.

In view of these facts, the Committee of Revision has established the principle that it is far better to introduce standards which can be readily attained, and then look to the laws to prosecute offenders who do not comply with requirements so easily within their reach. What is known as a "purity rubric" will be attached to substances capable of being tested, and this will be framed so that the lowest limit of the standard is distinctly stated. Thus boric acid will contain the following statement immediately under the title: "This acid should contain not less than 99.8 per cent. of pure boric acid." It will be observed that this does not prevent a manufacturer from selling a boric acid of 100 per cent. purity, if he so wishes, but it will prevent the sale of a boric acid of 90 per cent. grade for medicinal purposes.

Another great question arising out of the passage of the food and drug laws has been the strained construction placed on the laws by the judges of our courts. They have ruled that the standards required for medicines shall be rigidly applied to substances used in the arts. This may be a good law, but it is not common sense. Every one must recognise that the use to which a chemical is put must determine its standard of purity. Take, for instance, sodium phosphate. This is used largely in the arts for preventing the scale from forming on boiler tubes, and naturally those who buy it for this purpose need only know the percentage of real sodium phosphate in the product; but sodium phosphate nearly always contains arsenic, and the physician who prescribed sodium phosphate for a child would be likely to get untoward results if the boiler compound salt were used in place of the official pharmacopeial substance. In fact, the presence of minute quantities of arsenic in sodium phosphate has been the subject of special speculation. Some physicians have declared that they do not object to a trace of this contamination, but such an opinion has little weight with the committee of revision. Sodium phosphate must be practically free from appreciable quantities of arsenic if anything like exactness in therapeutic results is to be secured. Any physician who prefers sodium phosphate with arsenic can prescribe the exact quantity of the latter that he needs.

A clause will be inserted in a prominent place in the new Pharmacopeia, stating that the tests in the book are to apply solely to substances to be used as medicines. This will relieve the court judges and all from any trouble in this direction.

A small but important body of medical and pharmaceutic savants assembled in Brussels in August, 1902, constituting the *Conférence Internationale pour L'Unification de la Formula des Médicaments Héroïques.* Each country was entitled to send two delegates, the United States being represented by Dr. Horatio C. Wood and Dr. Frederick B. Power. Owing to the delegates having been appointed by the governments of the several nations, greater authority was conferred on this congress than that usually given to ordinary conventions. As the title of the congress indicates, the work was confined to the framing of an international pharmacopeia of potent remedies only. The limitation of the scope of the congress was a wise step, and, in fact, the conception of the idea of framing an international pharmacopeia of this kind arose from the recommendation of British pharmacists, the suggestion gaining impetus and assuming shape in 1893 at the Seventh International Pharmaceutical Congress, which met in Chicago in that year. The American Pharmaceutical Association aided greatly in the movement by declaring itself in favor of an international pharmacopeia for potent remedies only.

It should be stated in this connection that an international pharmacopeia, embracing all medicinal substances, has been a dream for more than half a century, and in all probability the project will continue in a nebulous condition until the millenium. The difficulties are apparently insurmountable. Each nation, through

long experience, has become accustomed to use certain drugs, and the pharmaceutic preparations made from these drugs have been in use so long that it would be an impossible task to supplant them except by the use of autocratic international power or by very gradual and slow methods. The stupendous utopian idea of having but one pharmacopeia for the world fades in impressiveness when the actual work of framing such a book is seriously considered.

It may be of interest for the members of this Association to know that an international pharmacopeia once progressed to the stage of a manuscript copy, and the outline was submitted to the succeeding international congress for approval. As soon as the admissions to the book were discussed in open session, a multitude of objections from the assembled delegates from the nations were heard. Naturally, the chairman, who was most influential in framing the work, had admitted a large proportion of the preparations which were used in his own country, and he, of course, thought that they were the best in the world, for with these he was most familiar. Inasmuch, however, as the great majority of the delegates knew very little about them, they preferred their own, and the result was one which could easily have been foreseen—the rejection of an international pharmacopeia of this kind. It was then plainly seen that all that could be hoped for in the way of international unification was a very small and simple code of standards, limited exclusively to potent remedies.

The Brussels congress above referred to was the first body to practically frame standards for such a work, and the new United States Pharmacopeia will be the first national authority to be issued which will recognise the standards of this congress. It would take too much time to detail the work of this congress, but the recognition of the standard of strength of the arsenical preparations is very important. It will not be long before every arsenical official solution throughout the world will have the strength of 1 per cent. Ten per cent. for tincture of opium, 5 per cent. of ferrous iodid in the syrup of the iodid of iron are among some of the standards fixed by this body. Ten per cent. and 20 per cent. tinctures will simplify very greatly the situation in this important class of preparations. Ten per cent. will be used for the potent drugs, and 20 per cent. for those which are weaker. This will make an important change in the strength of the tincture of aconite and tincture of veratrum viride, and information is hereby given at this early date, to physicians, that tincture of aconite will, after the new Pharmacopeia goes into effect, have but one-third the strength of the present tincture. Due care will be taken to spread the information as much as possible in advance. It will not make the tincture less useful; the dose will simply have to be increased. In addition to this, it should be remembered that the standards of the new Pharmacopeia will not go into effect until three months after the work is issued, and an official date will be placed on the title-page of the book announcing the fact. This action is necessary, because wholesale druggists and pharmacists must have sufficient time to adjust their preparations to conform to the new standards, and time must be given to physicians to become acquainted with the changes.

The alterations in nomenclature will not be very great. There are some, however, which will have to be made, because more accurate knowledge of the chemical composition of some of the substances will require it. It is believed that the present is a good time to change the name of carbolic acid. It is not an acid, but a phenol, and although this fact was recognized twenty years ago, the name "carbolic acid" was so firmly established that it was not deemed wise to change it. The name will still be used as a synonym, but physicians will find a shorter and more distinctive title in "phenol."

Synonyms will still be continued in the book, but their prominence will be lessened by not printing them in the text, and they will probably be relegated to the index. Synonyms have given much trouble to revision committees at all periods. It must be recognized that as a science or art advances, the names which designate the subjects of such science or art must be accurate, definite and, so far as possible, distinctive. Pharmacopeial revision has been traveling in this direction since the issue of the United States Pharmacopeia of 1890. Latin titles are now almost universally used in all departments of science, and the use of vernacular popular names for medicines, on account of their variation and indefiniteness, produces confusion and sometimes dangerous results. For these reasons the use of synonyms has been properly discouraged; they certainly should never be used in prescriptions, yet it is common to find in these such names as "laudanum," "paregoric," "Dalby's carminative," "cold cream," "Goulard's cerate," etc. The importance of always using pharmacopeial titles for prescribing official preparations should be insisted on, particularly by those who are charged with the important duty of instructing the army of young men in our colleges and universities.

The names of some of the synthetics which will be introduced may at first sound strange, but definite chemical names should be used rather than the fanciful titles given by the promoters who first introduced them. Some of these names will, of course, be longer than the trade names, but inasmuch as physicians always abbreviate titles in writing prescriptions, they will not prove burdensome.

For the first time in the history of pharmacopeial revision in the United States, average doses will be introduced. It would be beyond the scope of this paper to enter into the arguments pro and con, first, for the the introduction of doses at all into the book, and second, for the choice of the average dose over the maximum dose. In deciding these problems, the first question which confronts one is, "What is a dose?" And this is almost as difficult to decide as the question, "What is a poison?"

The physicians in the pharmacopeial conventions in the past have almost been a unit in opposing the introduction of doses into a national authority like a pharmacopeia. It is true that the German pharmacopeia inserts a maximum dose, but one can imagine the annoyance and even danger which would be experienced if maximum doses were introduced in this republic, into a book which the laws of the various states recognize as an authority. The liability for prosecution for malpractice and the possibility of suits at law arising from exceeding a maximum dose, would be great, but further than this, who can say that the dose of half a grain of morphin sulphate should never be exceeded, or that every time that a physician wishes to give a dose of morphin larger than this, he must indicate on the prescription that it is a special case? For otherwise he would be sure to have the prescription returned to him by the pharmacist, with possible injury to the patient on account of the delay.

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The United States Pharmacopeial Convention decided on average doses because they will be of far greater practical service than maximum doses. It is well known that the capacity of patients to tolerate large doses of powerful agents varies greatly, and even the same person at certain periods can bear larger doses than at others. In addition to this, the idiosyncrasies of patients is a real problem that every physician must wrestle with. For these, and several other reasons, the revision committee, in accordance with the instructions of the convention, will insert average doses.

In concluding this brief paper, I trust that I have indicated, in some measure, the direction in which the improvement may be looked for in the revision of the forthcoming United States Pharmacopeia.

THE RELATION OF THE PHYSICIAN TO PROPRIETARY REMEDIES.

HOW MAY SUBSTITUTION BE AVOIDED AND THE DESIRED PREPARATION OBTAINED WITHOUT UNDULY ADVERTISING THE MANUFACTURER?*

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In their relation to proprietary preparations, physicians may be divided into three classes: A, B and C.

To class A, unfortunately a very numerous class, belong those physicians who prescribe everything and anything that is brought to their notice. The composition of the products they prescribe is a matter of utter indifference to them. The prescribed product may consist of two or three well-known substances; it may be as common a substance as sodium bicarbonate under a disguised name, or it may contain morphin, strychnin, pilocarpin or other dangerous alkaloids in a strong alcoholic menstruum—they care not. It answers, or they think it answers, the intended purpose and they are satisfied. They are supported and encouraged in this attitude by such journals as the *Medical Brief*, of which many physicians of class A are readers, if not subscribers. What our opinion is of such physicians it is hardly necessary to state. They are really not physicians. They are merely laymen with a right—a legal right, not a moral right—to practice medicine. The layman reads that Father John's medicine is good for consumption, Green's nervura for the nerves, orangeine for headache, etc., and he goes to the drug store and gets those things. He does not know what they are, but he trusts the manufacturer. The physicians of class A act in the same way toward respiton, neurilla, and antikamnia. The difference is only in the names of the preparations, and even in the names there is sometimes no difference, for physicians of class A have been known to prescribe Radway's ready relief, Hood's sarsaparilla, Ayer's cherry pectoral, etc.

Class B is the other extreme. The members of this class are highly respectable physicians, but on the subject of proprietary remedies they are very unreasonable, or perhaps, I might better say, unreasoning; their attitude is a fanatical one, and is the result mainly of misapprehension, of ignorance of the true state of affairs. For them, the drug that is not in the Pharmacopeia or in their old text book of medicine does not exist,—as if materia medica, unlike all other branches of medicine, were incapable of further development. Calomel, digitalis, belladonna, opium and a dozen other drugs constitute their entire armamentarium. They are indignant at the mention of any proprietary or patent preparation. It is well to note, *en passant*, that many of our friends, the therapeutic nihilists, belong to this class.

Now, what is the cause of this inimical relation to all proprietary remedies? In my opinion it is due only to a misapprehension. These physicians confuse true patented preparations with the various nondescript nostrums, which are merely trade-marked and on which a patent could never be obtained. They confuse such true acquisitions to our materia medica as heroin, dionin, iodipin, collargol, duotal, adrenalin and orthoform, with Hood's sarsaparilla, Hostetter's bitters, Kilmer's swamp root, Warner's safe cure, peruna, phenalgin, antikamnia, manola, neurilla, etc. That some of our very best physicians make this error, I have occasion to witness almost every day. Recently I met one of our most eminent New York physicians, a man with a large practice and who is making a mark for himself by his work in physiology and pathology, and he confessed to me that up to a few weeks ago, he did not have the slightest idea that there was any difference between the two classes of preparations. Only yesterday Dr. Wm. Porter read an excellent paper at the meeting of the American Medical Editors' Association on the subject of proprietary remedies, but he made the same mistake of confusing proprietary non-patented secret nostrums with the true patented preparations. He was much surprised when the difference was explained to him. He said he did not think that one physician in a hundred knew the distinction. I therefore think that right here it will be very much *à propos* to stop for a moment and explain the real difference. It is about time that the hazy and vague ideas on the subject should give way to clear conceptions based on facts.

Now, a patented medicine is not, and can not be, a secret medicine, as I explained in another place. The very etymology of the word should show it. Patent is derived from the Latin word *patere*, which means "to be open," and a patented medicine is an open and non-secret medicine. In order to obtain a patent (on anything), the inventor or manufacturer must disclose the process of manufacture, to the minutest details. It must be described so fully and so explicitly, that any person of ordinary skill in that line of business, may be able, by following the directions, to produce an identical product; should there be any incompleteness in the description of the process, the patent becomes void; should there be any wilful deception, the inventor is liable to fine and punishment. Beside the process, he must also give the physical appearance, chemical properties, tests for identity, etc. The directions in the Pharmacopeia for making any preparation and the tests for identity are not and could not be more explicit than those given in the application for any patent. Where is the secrecy then? But the thousand and one "sarsaparillas," "perunas," "tonics," pain killers," "blood purifiers," "favorite prescriptions," "golden discoveries," antikamnias, phenalgins, neurillas, manolas, sengs, chionias, etc., which are the curse of the American people and of the American physicians, are not patented at all. They are only trade-marked; that is, the name of the mixture is registered, and is claimed as a trade-mark. Many of these nostrums could never be patented, even if the owners wanted to, because in or-

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der to obtain a patent, some novelty must be proved. Beside, the nostrum manufacturers would never think of patenting their wares. In order to do so, they would have to disclose their exact composition—which would not be at all to their interest. It is secrecy which is the chief, if not the only asset of the manufacturers of those secret but erroneously called "patent" medicines.

Another important point is that the true patents are protected for a limited time. Generally after 17 years, both the process of the patents and even the name itself become public property and every one is free to manufacture and to sell the product, while the trade-marked nostrum is a monopoly in perpetuity.

Thus, for instance, the patent on antipyrin has run out and any one can now manufacture antipyrin and sell it under that name. The name, however, of a nostrum is a monopoly forever and no one will ever be permitted to mix acetanilid, sodium bicarbonate and caffein and call the mixture antikamnia or phenalgin. The difference is seen to be an important one. The true patented synthetic, after paying its inventor for the time, labor and money expended, becomes public property; the nostrum—never.

I think enough has been said to enlighten anybody in need of such enlightenment, as to the true difference between patented remedies and nostrums.

Our friends of class B may raise, and sometimes do raise, another objection. The objection is, that it is unethical, or even immoral, to patent and thus monopolise products which concern the life and health of the people. Measuring by the noblest and highest standard of morality, it is immoral to patent anything, and make the people pay tribute to the patentee. I believe that the time is not far distant when the state will buy every useful invention or discovery, and then give its use free to the people. And when I soar still higher and look with mental eye into the more remote future, I can perceive a state of society in which no such thing as a patent or a patent office will exist; a state of society of such a high moral and intellectual level that any inventor will be only too happy to give his invention to the community free; happy in the consciousness of having contributed something toward the comfort and welfare of humanity; that consciousness of having added a single brick to the noble structure of human comfort and happiness will be the only reward an inventor will seek or care for. But that future is far off; so far off, that neither we nor our grandchildren will see it. At present we live in an age of intense competition; the struggle for existence is so fierce, that every one must stand firmly on his feet and be constantly on the lookout—or he will be swept off by the seething current of commercial rivalry. In such a state of affairs, is an inventor to be held up to reproach, because, after having spent years of labor and considerable sums of money, he wishes to reap some pecuniary reward from his useful invention? Useful it must be; otherwise no amount of patenting will do any good; the invention will only prove a pecuniary loss to its originator. No! People who maintain large laboratories, invest large capital for problematical returns and pay large salaries to expert chemists and bacteriologists, should be entitled to protection and to pecuniary reward when they happen to discover or invent a useful product.

But, let us assume for argument's sake, that it is not right to obtain a patent on a medicinal preparation. What has that to do with our using or not using the product? Our first duty is toward our patient, and if we consider a product useful, we should use it without bothering ourselves with the question whether somebody is getting rich by it or not. I dislike the telephone and gas monopolies exceedingly. I consider them worse than highway robbery—must I therefore do without a telephone or without gas? The morality of the chief mover in the Standard Oil Company trust would not stand a good *x*-ray exposure—must we therefore do without kerosene? The opposition to the use of certain remedies merely because they are proprietary, is thus seen to be ill-founded and, I might say, childish.

The physicians of class C are the broadminded and well-informed members of the medical profession; the physicians who do things and who are responsible for the progress in materia medica and therapeutics. They preserve the unbiased attitude toward any drug, any remedy. They know that many drugs, though having the official sanction of our Pharmacopeia, are either perfectly worthless or practically so, while many of the newer remedies are of the highest importance in fighting disease. The members of this class are investigators and, before they adopt a remedy into their practice, or even before they give it a trial, they try to find out several things.

First, they want to know the composition of the remedy, what it is that they are asked to use on their patients. They may not care to know just what the vehicle is, or the exact details of the process of manufacture, but they do want to know all the active ingredients, both qualitively and quantitively, and they want to have some idea of the process of manufacture. If this information is not forthcoming, they have nothing further to do with the remedy, absolutely nothing. The sample, if they get any, goes into the ash-barrel.

The second thing they try to learn is something about the foster parents of the remedy, the firm that launches it on the market. It is a well-known fact that perfect ignoramuses, people that have not the slightest idea of chemistry, materia medica or therapeutics, drug clerks, unable to hold a position; druggists, who fail in business; advertising agents, bank clerks, real estate agents, promoters, saloonkeepers, etc., constitute themselves "chemical companies" and try to teach the profession what to use on their patients. Now, it is not very likely that such "firms," such "chemical companies," can offer us anything really novel, really valuable. They are not likely to compare favorably with firms of long standing, firms that maintain research laboratories and scientific staffs, firms that subject new products to animal experimentation and clinical tests before offering them even tentatively to the profession. When such firms offer us something new, it is at least worthy of a trial. It does not mean that we are to accept anything that such firms offer us on faith; not at all. We must scrutinize and watch for by-effects very closely; for the commercial instinct, even at its best, is apt to exaggerate the good qualities of a product and minimize the bad ones. But I say that it is at least proper to give the drug a trial. High-class manufacturers are not very likely to put utterly worthless products on the market, for it would react injuriously on their standing, on their reputation and on their other valuable products.

This, then, is the right attitude toward proprietary remedies; unbiased, yet cautious; unprejudiced, yet skeptical. Let us hope that this—now the attitude of only a portion of the profession—may, through the efforts of this Section, become the attitude of the entire profession of the country.

So far, I have dealt with the relation of the physician to proprietary remedies. I now come to the second part of my paper: How may substitution be avoided and the desired preparation obtained without unduly advertising the manufacturer? How may substitution be avoided? The very fact that the question must be discussed is a reproach to American pharmacy, for it implies that substitution exists. Well, it does exist, and it is useless to shut our eyes to a well-known fact or to mince words. For twelve or fifteen years I have made a study of that disagreeable subject, and while I am inclined to believe that, on the whole, substitution is on the decrease, still it is yet sufficiently widespread—and in some cases in a very aggravated form—to demand attention. I believe that the abolition of substitution lies to a great extent in the physician's hands. One of the reasons why substitution has been so freely practiced by the unscrupulous is the lack of fear of detection. The patient, of course, does not know if any sophistication has been practiced, and the physician often does not know any better. It is the physician's total unfamiliarity with the appearance of the preparations that makes substitution so easy. If the unscrupulous druggist knew that the physician is familiar with the color, odor, taste and solubility of the preparation he prescribes, and that he occasionally goes to the trouble of examining his patient's medicine, substitution would be much less frequent. This is not theory, but fact. I have more than once heard drug clerks say that in their stores nobody dares to trifle with So and So's prescriptions, because he always examines his medicines and complains if anything seems wrong. Then, let the physician make it a practice to go to the drug stores in which his prescriptions are generally put up, and ask casually to see the original packages of the new preparations that he prescribes. That is a very good way of making sure that the preparations are kept in stock and are dispensed. For substitution, as a rule, is most frequently practiced when the preparation is not in stock, and the druggist is unable to get it at a moment's notice. To dispense one preparation for another, when the other is on hand, is rare indeed, though I have known it to occur. If a druggist proves an incorrigible substitutor—there are such—then it is right and proper for the physician to expose him to his medical confrères so that all physicians may cease patronizing him. Of course, great caution is necessary before such action is taken, and it should not be taken unless the physician is perfectly sure of his ground. This would be a drastic remedy, but an absolutely effective one. If the druggist, suffering with moral obliquity, knew that he might be running the risk of a universal boycott, he would be much more careful, and might gradually break himself of the habit. Finally, if the physician has a druggist in whom he has perfect confidence, it is perfectly proper for him to direct his patients to that druggist. I know that this practice is frowned on by many. I know that in Germany this practice is distinctly forbidden by law, under a heavy penalty, and nevertheless I have no hesitation in giving it my emphatic approval. The conditions here are different from Germany. There the druggists are all of about the same standing; they have to go through the same course, the same discipline; the drug stores are under strict government control, etc. Here the druggists differ very widely in their preliminary education, their attainments, in the capital invested (anywhere from $200 to $50,000), in the number of prescriptions dispensed (some not putting up more than five or ten a week, others 200 to 300 a day), etc. Then, with a drug store on every corner, the competition is very fierce, and if not substitution, the employment of inferior and old drugs is inevitable. And for this reason, I say that, in this country, a physician has a perfect moral right to choose his druggist. I notice that many good men are assuming the same attitude. Dr. Rusby, though also a professor in a college of pharmacy, tells his students at the University and Bellevue Hospital Medical College that, though they may be misunderstood and their action misinterpreted, still he advises them, when they are graduated and have entered practice, to insist that their patients go to a certain druggist, in whom they have perfect confidence. A French medical society, recently discussing this very subject, came to the same conclusion: that a physician has a right to choose his druggist, and insist that his patients go there and not elsewhere. If this could be accomplished—that is, if we all had druggists in whom we had perfect confidence—the problem of the "original-package" evil would be solved at the same time. We should need no original packages. Perfectly confident that whether we prescribe a dozen tablets or capsules or 4 fluid ounces of a mixture, that the genuine article would be dispensed, we, of course, would not think of prescribing original packages. That the "original package" is an evil, none will deny. It is an open road to that greater evil, self-medication, which is so injurious to physician, patient and druggist alike.

I have spoken to a number of prominent manufacturers, in whose integrity and truthfulness I have perfect confidence, and they assured me that they were forced to adopt the original package device by sheer necessity. They were opposed to it themselves. They would rather see their products dispensed in a professional manner, but when they saw their trade slipping away from them; when they saw their products, on which they spent time, money and research, being brazenly imitated by various firms that convinced the druggist that their imitation was just as good and much cheaper (an argument which always has a powerful influence on a commercial man), then in self-defense they were compelled to urge the physicians to prescribe in original packages only. Many physicians told me the same thing, and I can corroborate it. I will take one illustration: There is a certain well-known preparation of iron and manganese; there is nothing wonderful in that preparation, but it is a good, readily assimilable, non-irritating, ferruginous tonic. I know its indications and limitations, and when I prescribe it for women and children, I want it and nothing else: nothing just as good. I used to prescribe it in 4 and 6-ounce quantities, and several times the most peculiar combinations were dispensed. Two or three times acid preparations were dispensed, so that the milk in which I ordered the preparation to be taken turned sour, and the patient's stomach was upset. Another time, tincture of iron with some essence of pepsin, which the druggist, with whom I remonstrated, told me was every bit just as good; and still another time, a turbid mixture with a precipitate at the bottom, was dispensed. Since then, whenever I find myself in a strange neighborhood, I prescribe that preparation in an original package, and I underscore original package half a dozen times, to the intense amazement of the druggist, who can not get over his

surprise at Dr. Robinson prescribing in original packages. Not at all exceptionally, I find the patient buying that preparation afterward, without my order. But what am I to do? My first and paramount duty is to my patient, and if, in my judgment, he needs a certain product, it is my duty to see that he gets that product, without considering possible future consequences.

A word here about the results of substitution may not be out of place. The possible disastrous consequences to patient and physician need not be dwelt on before a medical audience. To the druggists themselves the practice can not fail to prove disastrous. Unless the physician can be sure that his orders will be complied with strictly and faithfully, one of two things is liable to happen: either the physicians will take to dispensing their own medicines or they will form chains of drug stores for the sole purpose of dispensing prescriptions, and which would merely be expected to be self-supporting. Either one of those possibilities would mean the extinction of the pharmacist as a professional man—something that neither the true pharmacist nor his true well-wisher can look forward to with equanimity.

SUMMARY.

I would summarize my paper as follows:

1. The prescribing and using of preparations, the composition of which is unknown, is to be condemned unequivocally. It is unscientific, unethical, and is bound to react injuriously on the physician and the public alike.

2. The physician who refuses to use a thoroughly established remedy, of known composition, merely because it is proprietary, is guilty of narrow-minded fanaticism, and he is not doing the best by his patients.

3. Substitution does exist, and is a serious evil, in some localities especially.

4. The abolition of substitution lies to a great extent in the physician's own hands, and he can accomplish it by making himself familiar with the physical characteristics of the remedies that he prescribes; by patronizing pharmacists in whom he has perfect confidence, and by exposing those who, he is certain, are incorrigible substitutors.

5. The physician is guilty of encouraging substitution by ordering every new mixture that is brought to his attention by circulars, drummers and venal journals; but while this is an explanation of the prevalence of substitution, it is no justification for it.

6. Prescribing in original packages is an evil, but being a lesser evil than substitution, it is often justifiable.

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DISCUSSION

ON PAPERS OF DRS. WILEY, REMINGTON AND ROBINSON.

DR. H. C. WOOD, JR., Philadelphia, thinks that while physicians may accomplish, and have accomplished, a great deal by public education, the evil requires Federal control. Physicians can uphold the authorities, and should do so. A great influence is exerted by the rich owners and manufacturers of proprietary medicines to oppose this work. The magazines and daily papers, which derive much income from proprietary medicine advertising, also exert a great influence against Federal supervision. If those who conduct these publications could be made to see the true character of the business and its injurious results on the community, they would refuse to lend their influence and support. The members of the medical profession are certainly to blame for taking so little interest in these important questions, so clearly related to public health. Dr. Wood reported reading an editorial in THE JOURNAL of the American Medical Association,[1] urging physicians to support a pure food bill, which had passed the House of Representatives, although this was the first that he had heard of it. He spoke of it to several medical friends, and found that they knew nothing about it. One, a rather prominent man in the profession, who had not seen the matter in THE JOURNAL, said that he was not especially interested in the subject and did not regard it as worthy of much attention. Dr. Wood thinks that for every physician who wrote to his congressman in favor of this pure food bill, there were ten manufacturers financially interested who wrote letters in opposition to it. Of course, we can not meet with success in passing bills unless more interest is shown by the profession. The position of the Postmaster General on this subject is known; and it behooves physicians heartily to co-operate with him and to support him in his refusal to allow the use of the mails to those who are engaged in a business which fraudulently deprives the people of their health as well as of their money.

DR. THEODORE POTTER, Indianapolis, said that after investigating this subject, he had concluded that substitution owes its instigation among druggists to the abominable habit among physicians of prescribing proprietary medicines. Recently a leading pharmacist in Indianapolis showed Dr. Potter fourteen different varieties of proprietary iron preparations, all of about the same general character. Of course, when a prescription for a fifteenth variety comes in late at night the druggist is inclined to throw up his hands and put one of the fourteen in its place. The remedy is for physicians in each community to uphold legitimate pharmacy. Dr. Potter called attention to the fact that there has seldom appeared a paper written by a member of the Indianapolis Medical Society endorsing a proprietary remedy. There are no set rules on the subject in the society, but it is an unwritten law, a moral sentiment that is stronger than law, that no proprietary remedy shall ever be mentioned, either in papers or discussions. It is an unwritten law that no nostrum shall be mentioned in the *Indiana Medical Journal* and it does not. If a paper offered for the original department should mention a nostrum by its commercial name, this would be changed by the editor to its scientific name, or would be returned to its author, with a request for the scientific name of the agent which he employed. In the Indianapolis Medical Society there has been no resolution offered on this subject, but there is a sentiment so strong, that if any member should mention on the floor of the society the name of such a remedy, he would be laughed at. Occasionally, a young member, afflicted with the proprietary medicine disease, may use such a name, and a smile will go around the room. The physician is not likely to do so again. Another thing is that the names will never go into the records of the society. So far as law is concerned, the remedy is in the hands of the Government, as Professor Wiley has shown. The question, so far as we physicians are concerned, is one of science and good morals.

DR. CLEMENT B. LOWE, Philadelphia, assigned as one reason for the great use of proprietary remedies, the fact that a large number of young physicians when they graduate are not well acquainted with the tools which they have to use. The medical student is taught about drugs, but does not learn how to prescribe them. In the lectures and text books they are often spoken of only in general terms. Dr. Clement spoke of an institution in which the students complained of the time they were required to spend in the pharmaceutic laboratory and they were supported in their action by a prominent physician connected with the institution, who said he did not see the necessity of their knowing about preparation of remedies to qualify them to be physicians. In other words, all the graduates were expected to settle in large cities, or if they should settle in the country, they would either not prescribe, or would use these new remedies that are coming out every

1. April 2, 1904, p. 894. The bill is given in full on page 910.

day. Every student in his third and fourth years should be required to take a course in prescription writing. Dr. Lowe said that he would bring in a case, request a diagnosis and require the students to write proper prescriptions for such a condition, make them explain their prescriptions, and discuss the reasons for giving them. He would have several such conferences each week, making the students practice prescription writing until they were familiar with it. In this way they would be prepared to use their tools, and no proprietary remedies could be pushed on them.

DR. HENRY BEATES, JR., Philadelphia, said that proprietary and patent remedies thrive because they are prescribed by the profession.

We are dealing with effects rather than with causes. No two patients present conditions which are exactly alike as to symptomatology, or which from a scientific point of view can be skillfully and successfully treated by exactly the same plan. Every remedy has its value because of its inherent properties. Every disease pursues a definite course, because of the operation of the laws underlying its cause. The healthy body has functions disturbed by morbid agencies. It also has functions restored by the influence of remedial means, and when the medical profession becomes educated to that high standard which is necessary for the comprehension of these unvarying laws and skilled in the art of applying this knowledge, there will no longer be prescribed any proprietary remedy, because each physician will know that a set formula cannot possibly be fitted to the conditions presented. Proprietary medicines will cease to exist because there will be no use for them.

DR. O. T. OSBORNE, New Haven, Conn., replying to a question, said that in the Yale medical school the teaching of pharmacy and prescription writing is commenced in the second year, and is carried on through the third and fourth years, by blackboard exercises and didactic instruction until the student is thoroughly familiar with prescription writing. Then he goes to the hospital and begins to use the formulæ of the hospitals and forgets how to write prescriptions.

DR. C. B. LOWE said that some professors make the students work and others do not. When he was a student he was asked by another student if he knew how to write a prescription, and he replied that it did not trouble him any because of his previous study of pharmacy. The student said it troubled him greatly and was, for him, the hardest part of the course. A student is crammed with facts about every part of the human body and about everything required to make him a surgeon, and when he graduates he knows every point about his anatomy, and is ready to operate for appendicitis, or to amputate limbs, which he only very rarely may be called on to do; but when it comes to write a prescription—which he is called on to do every day and on which his reputation and the welfare of his patients depend—he does not know how to write prescriptions and he falls back on proprietary remedies.

DR. W. C. WESTCOTT, Atlantic City, reported having seen a recent medical graduate construct a prescription by copying the label on a bottle. Dr. Westcott called attention to a circular which the firm which markets antikamnia is sending out to druggists notifying them that their tablets are now put up in suitable packages for retail trade, convenient to be carried in the vest pocket. He also called attention to the great use among the public of sulphonal, trional, somnal, etc. Persons go into a drug store and ask for ten or fifteen grains of these coal tar products and order them by their names as if accustomed to taking them. He particularly called physicians' attention to those proprietary remedies which have their names blown in the bottles, to advertise them to the public. He thinks that the popular use of these proprietary remedies is due to the fact that physicians order them in the original packages. Where would listerine have been if it had not been first prescribed by physicians?

The remedy for substitution is in the physicians' hands. In every community there are reputable druggists who will not substitute, and these are known to the physicians. It is their duty to patronize the good drug stores and to pass the bad ones by.

DR. ADOLPH KOENIG, Pittsburg, Pa., declared that the trouble lies in defective education in medical schools. Students are graduated with a very imperfect knowledge of the medicines they are to prescribe. In this condition they are approached by suave agents with samples, they are furnished remedies for every disease, and literature to tell how they shall be used. Now, why should not an intelligent public buy these directly from the drug store? Why should it seek the advice of a physician, merely to be told to take one of these preparations? Has the physician any right to take money from patients for such advice? It is simply robbing them to do so. We should see that all advertisements of proprietary remedies are eliminated from the pages of our medical journals.

They are not necessary for a medical journal of the better kind. I have edited a medical journal for the last eighteen years—the *Pennsylvania Medical Journal*—and in it no proprietary advertisements are allowed. If a medical journal can not be sustained without this class of advertising, it deserves to fail.

DR. THOMAS L. COLEY, Philadelphia, said that he believes that any one who obtains a patent on a remedy having to do with the treatment of disease assumes a very grave moral responsibility. Such a practice puts a premium on methods of treatment and a physician who holds such a patent is on a par with the man who would take out a patent for a crutch or any apparatus indispensable to the crippled. It is the commercial element alone that induces men to patent their products and it is good business for them to get physicians to prescribe them. A market is frequently made for such preparations by methods that are not reputable. Many of these drugs are exploited without having been studied carefully and before their full effects are known. There is not a high ethical ideal, in all cases at least, actuating those who have charge of these "scientific laboratories" of which we have heard so much. At times these reports are honest, more often they are inspired and never does one see the untoward effects of the drug mentioned. Dr. Coley does not think the reason for the common use of these preparations is because prescription writing is not well taught in the best medical schools. In some, at least, it is very well taught. One strong reason is that while a physician is sitting in his office during his first years of practice no one comes in to urge him to use the remedies of the Pharmacopœia or to vaunt their excellent qualities, but there are hundreds of representatives of various firms who call repeatedly to urge him to use their proprietary medicines and who keep them before his attention. If he begins to prescribe these drugs he soon loses sight of the fact that in almost every instance there are official preparations which would serve an equally good, if not better, purpose.

MR. M. I. WILBERT, Philadelphia, said that, while it is true that some of these synthetics have been brought out by large manufacturers, who employ hundreds of chemists to discover new synthetic compounds, and in addition to this employ physiologists to discover their possible uses, these firms do not furnish us with readily applied tests by means of which we can identify their preparations, distinguish them from others or discover any probable impurities. Neither do they publish broadcast the possible deleterious effects these preparations may have. If the medical authorities in charge of hospitals would insist that the institution employ a competent pharmacist there would be no need of hospital formulas and the consequent prescribing of ready made or proprietary preparations.

DR. HARVEY W. WILEY, Washington, D. C., declared that there is no difference of opinion about the evils of these nostrums. In his examination into the composition of preparations of this class he found them to consist principally of starch, sugar, with flavoring ingredients, and often of small quantities of recognized remedies, and he supposed they might cost as much as one and a half or two cents a box at most. Experience justifies the work that is now going on to protect the sick from this class of preparations. Whether the active agent is in food, drink, or proprietary medicine, it should only be used on a physician's prescription. If persons are sick enough to take medicine they should consult a physician, and only take medicine under the direction of a physician.

DR. JOSEPH P. REMINGTON, Philadelphia, denied that the only object that physicians have, in adopting their profession, is to make money, or that the only object the pharmacist has in adopting his profession is to make money. If the large manufacturers of synthetics who employ two or three hundred chemists make money their only object, it is very good that we should learn that it is, then, solely the almighty dollar that they are after. One of these manufacturers had the audacity and greed to come from Germany to this country, to take out patents and to execute contracts which compel the sick to pay more than double price for his article. The physicians and druggists of this country can not obtain this substance, even when imported into Canada, without paying double price. If we have any object except that of getting money, if we have a spark of ethical spirit, we should inform these men that they are mistaken in their estimate of the physicians and pharmacists represented by this body, if they say we are after nothing but money.

DR. ROBINSON said that he was surprised to see men eminent in the profession assuming, through misapprehension, such a position of antagonism to true scientific progress. It has been intimated that if a druggist has fourteen articles of a class, if a prescription comes in for a fifteenth, which he has not in stock, that he has a right to substitute something else. How can he know that that something else will answer the purpose? He has no right to judge. His duty is simply to fill the prescription. For instance, if a doctor prescribes heroin, which is di-acetyl morphin, if the druggist does not have it, may he substitute morphin?

Dr. Robinson challenged any physician in the room to say that he did not use proprietary remedies, and asked Dr. Coley if he had ever used adrenalin, to which Dr. Coley answered, "Yes." Dr. Robinson said that there is a tremendous difference between these remedies as to their therapeutic value, but we must discriminate. There is a widespread habit of wholesale, indiscriminate denunciation of proprietary remedies which does much more harm than good, and this discussion has shown him the absolute timeliness of his paper. The pharmacopeial articles cannot effectually replace all these new products; to believe otherwise means to believe that all progress in therapeutics is impossible, and has ceased forever. He did not mean to defend a physician who patents anything relating to the treatment of the sick. On the contrary, he would condemn him most emphatically. But it is different with patents taken out by commercial men, who have thousands or millions of dollars in their business, and who would not carry on their investigations if they had no protection, and if the results of their work could be appropriated with impunity by other manufacturers. He considers the advertising pages of our medical journals *particeps criminis* in the extension of the use of proprietary nostrums. They should discriminate among these agents. These proprietary remedies would not obtain the vogue that they have, if some of the best journals did not bring them before the physicians. The advertising pages should have at least some supervision, the same as the reading pages. He asked, if we are to use only scientific titles in place of the names of proprietary articles, what physicians will use those titles. Who, for instance, would write for benzoyl-vinyl-diacetone alkamine hydrochlorate, in place of eucain? Prof. Remington believes that only scientific names should be introduced into the Pharmacopeia; what would he do with that title?

PROFESSOR REMINGTON replied that the drug was not in the Pharmacopeia on account of its name.

DR. ROBINSON said that if a drug has value it should not be excluded merely on account of its name, to which Professor Remington replied that it probably is not worth anything.

DR. ROBINSON declared that a pharmacist, be he ever so eminent, has no right to pronounce an opinion as to the therapeutic value or worthlessness of a remedial preparation. Should eucain be omitted merely on account of the length of its name? Is there a preparation in the Pharmacopeia which could be substituted for orthoform, which is methyl-para-amido-meta-oxybenzoate?

PROFESSOR REMINGTON, replying to a question, said that there will be about fifteen or twenty synthetic remedies in the new Pharmacopeia. They will not be introduced under fanciful or trade names, for obvious reasons; the titles will be chemical names, wherever practicable. It is not necessary to give their full names. For instance, take the pyrophospate of iron; its full name would be ferri pyrophosphas cum sodii phosphate. Of course, it is possible to use the full title, but it is not necessary. We can adopt a definite title by which it can be prescribed.

THE ETIOLOGY AND PATHOLOGY OF GOUT.

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BALTIMORE.

(Concluded from page 1600.)

(B) URIC-ACID METABOLISM IN GOUT AND THE THEORIES OF GOUT PRODUCTION.

There is undoubtedly marked disturbance of nitrogenous metabolism in gout. Since the adoption of the classification of purins into the "endogenous" and "exogenous" varieties, too little time has elapsed and too few researches have been published to draw absolute conclusions as to how the metabolism of each is affected in this disease. The studies of Reach, Kaufmann, Vogt and Chalmers Watson show that in gout the exogenous nuclein is more slowly excreted than in health, and that in some cases there is a distinct retention. Vogt compared the results of rich purin-holding food on a gouty patient and a healthy individual at the same time. The gouty patient showed retention and delayed excretion of the purin bodies. It can be safely admitted, therefore, that exogenous purins lead to the excess of nuclein derivatives in the blood stream. It may be appropriately mentioned here that Vogel and Schmoll have demonstrated that the nitrogen balance is disturbed in gout and that there is a definite nitrogen retention. There is no question but that the metabolism of the endogenous purins is much disturbed in gout. This will probably be best shown by a consideration of the amount of uric acid excreted in the urine as well as that present in the circulating blood in this disease.

The Excretion of Uric Acid in the Urine.—Since Garrod's expressed opinion, based on quantitative analyses, that there was a diminished excretion of uric acid in the urine both in acute and chronic gout, the majority of observers, until a comparatively recent date, supported this view. According to Minkowski these early results can not be accepted as being correct owing to the defective methods of analysis used. Since the adoption of reliable methods of quantitative analysis in recent years Garrod's results have not *in toto* been supported. From the analyses made by Ebstein, Pfeiffer, Luff, Camerer, Weintrand, Schmoll, Kaufmann and Mohr, Magnus-Levy, His and others, all of whom used reliable methods, Minkowski[2] states that the following conclusions may be drawn:

1. The daily excretion of uric acid in the intervals between acute attacks ranges within the same limits as does the excretion in healthy individuals.

2. In chronic gout, even in those cases in which there is marked deposition of biurates in the tissues, a constant variation from the normal amount of uric acid excretion in any one direction has not been definitely proved.

3. Immediately preceding an acute attack there is

2. Minkowski: H. Nothnagel, Specielle Pathologie und Therapie, vol. vii, No. 2, p. 193, et seq.

regularly a diminution in the amount of uric acid eliminated in the urine, whereas during and after the attack the uric acid output is increased.

My own analyses, in a number of cases in which the Folin modification of the Hopkins method of uric acid estimation was used, fully accords with the statement contained in Section 3. They, however, differ materially from those stated in Section 2. I have almost always found a marked diminution in the uric acid excretion in the intervals between acute attacks in chronic tophaceous gout.

To what are these variations in the amount of uric acid excreted in the urine due? We shall only consider the possibilities here. The diminution in the excretion of uric acid before the onset of an acute attack may be interpreted as meaning either a diminished uric acid production or a diminished power on the part of the kidneys temporarily to excrete uric acid. The sudden deposition of the uric-acid salts about the joints and in the tissues affords a third possible explanation for the diminished uric-acid elimination. The increased uric-acid output during an attack may be due to an increased uric-acid production, or to the fact that the previously retained uric acid is temporarily excreted in increased quantity. The variations in the excretion in gout may further be due to the fact that at times a smaller and other times a larger part of the uric acid in the organism is further metabolized into other waste products, as urea for instance. It may be possible to draw more definite conclusions as to the cause or causes of the variations in uric acid elimination in gout after we consider the uric acid content and alkalinity of the blood in this disease.

The Uric Acid in the Blood.—Garrod, Abeles and Magnus-Levy claim to have demonstrated uric acid in minute traces in the blood of normal individuals. Minkowski and others assert that uric acid is not demonstrable in the blood in health. In gout, however, all observers now agree that there is a marked increase of the uric acid in the circulating blood. Garrod first demonstrated this excess by quantitative analyses and also by his now famous "thread-test." Klemperer found in three cases of gout during the attack, .067, .088 and .0915 grams of uric acid in 1,000 c.c. of blood. He was unable to demonstrate uric acid in normal blood. Magnus-Levy made 34 analyses in 17 cases of gout and found the uric acid in the blood to range between .021 and .10 grams in 1,000 c.c. of blood.

Garrod's theory for the production of gout is briefly as follows: He holds that in gout the alkalinity of the blood is lessened and the amount of uric acid in the blood is increased owing to deficient power of elimination on the part of the kidneys. He attributes the deposition of sodium biurate in the tissues to the diminished alkalinity of the plasma, which is unable to hold the uric acid combination in solution. During an acute paroxysm there is an accumulation of the urates in the blood and the inflammation is caused by their sudden deposition in crystalline form about the joints.

Subsequent investigators have not been able to fully confirm all Garrod's results. As has already been stated, there is general agreement that there is a marked increase in the uric acid in the blood in gout. Garrod did not make careful quantitative analyses to ascertain whether the amount of uric acid in the blood during an acute attack was actually greater than in the intervals. Magnus-Levy, however, made a careful investigation of this question. Of ten cases of gout studied, the uric acid was the same during the acute attack as in the interval in five, greater in two and less in three. It cannot be said, then, that there is by any means a constant increase in the amount of uric acid in the blood during an acute attack over that present in the intervals.

The methods of determining the alkalinity of the blood are notoriously unreliable. Garrod simply makes the statement that the alkalinity of the blood in gout is markedly diminished, but I find no reference in his writings of any quantitative determination, or intimation as to how he arrived at this conclusion. Recent investigations along this line by different observers and with methods believed to be reliable, are conflicting in their results. Pfeiffer, Jeffries and Drouin claimed to have found an increased alkalinity. Klemperer, in three cases of acute febrile gout in which the alkalinity was determined by estimating the carbonic acid in the blood —the most reliable method—found a very slight diminution, but not enough to account for the precipitation of the dissolved uric acid. In 16 cases in which Löwy's titration method was used, Magnus-Levy found no appreciable diminution in the alkalinity. In 11 cases he compared the degree of alkalinity during and between attacks. In 3 of these there was a diminution during the acute attack; in 2 an increase, and in 6 there was no difference. These results in general show that there is no constant diminution in the alkalinity of the blood in gout, nor is alkalinity apparently diminished to a greater extent during the acute attack than in the intervals.

Klemperer conducted a series of experiments which have a very important bearing on this question of the relative alkalinity of the blood in healthy and in gouty individuals, as well as on the effect that a possible change in the alkalinity may have on the power of the plasma to hold uric acid in solution. He found that the blood of the gouty person is not a saturated solution of uric acid and that it is still capable of dissolving more uric acid. Whereas, 100 c.c. of blood serum from three healthy persons were capable of dissolving .166, .171 and .174 grams of uric acid, the same amount of serum from three gouty patients was still capable of dissolving .126, .14 and .18 grams of the acid. The conclusion to be drawn from this is, that an over-loading of the blood in gout can not alone be regarded as the cause for the deposition of the sodium biurate in the tissues. This is substantiated by the fact that in other diseases, such as leukemia, there is a marked increase in the uric acid in the blood, yet urate depositions in the tissues do not here occur. There are only five cases reported in the literature in which definite gouty manifestations have been found in association with leukemia. This number is so small that the co-existence may well be considered accidental.

Origin of the Excess of Uric Acid in the Blood.—Three possibilities present themselves as explanations for the excess of uric acid in the blood of gouty individuals. 1. Increased formation. 2. Diminished destruction or oxidation. 3. Diminished excretion in the urine.

Although the increase in the uric acid in the blood and urine in leukemia is undoubtedly due to increased formation, resulting from increased nuclein destruction, there is no special evidence to support the view that the excess of uric acid in the blood in gout is due to the same cause.

It is also highly improbable that the excess is due to deficient powers of the organism to oxidize and destroy the uric acid. Klemperer has shown that the blood of the gouty as well as that of the healthy person possesses the power *in vitro* of destroying uric acid.

The most probable explanation for the increase is that it is due to a diminished excretion of uric acid by the kidneys with consequent retention of uric acid in the circulating blood. Minkowski, who has comparatively recently reviewed the evidence, supports this theory. Hans Vogt and Reach have shown that the output of uric acid after the ingestion of nuclein or nuclein-containing food is much less marked in the gouty than in the healthy individual. Schmoll, however, claimed to have found no such diminution. Garrod was of the opinion that the excess of uric acid in the blood was due to the nephritis present. It is a well known fact that in chronic gout serious organic disease of the kidneys occurs. It has been suggested that even before any organic disease in these organs develops there may be a "functional" disturbance of the secretory elements. Minkowski and His have advanced the view that the uric acid in gouty individuals circulates in the blood in a different organic combination than in the blood of healthy persons and that consequently the kidneys are functionally incapable of eliminating the acid in the same way they do in normal metabolism. Although there is undoubtedly an intimate relationship between the excess of uric acid in the circulating blood and the nephritis present in chronic cases of gout, the evidence is still inconclusive as to whether the former or the latter is the primary condition. Notwithstanding the fact that many competent observers failed to find any special diminution in the excretion of uric acid in the intervals excepting just preceding the acute attack, yet a diminished excretion of uric acid by the kidneys seems the most generally accepted theory for the excess of uric acid in the blood in gout.

The Excretion of the Alloxuric or Purin Bases and of Phosphoric Acid in the Urine.—Too little is as yet known regarding the amount of alloxuric or purin bases excreted in the urine in gout. Numerous estimations have been made by the Krüger and Wulff method which, however, was later shown to be inaccurate. Later methods, regarded as more reliable, show that normally about one-tenth of the total alloxuric or purin bodies eliminated in the urine is in the form of alloxuric or purin bases, the other nine-tenths being made up of uric acid. When it is remembered that the average daily excretion of uric acid is, according to Hammarsten, 0.7 gram, an approximate idea of the normal amount of alloxuric or purin bases can be obtained. There is no definite evidence to show that this normal relationship is disturbed in gout. Kolisch found that the alloxuric or purin bases were increased, but his results can no longer be accepted, as his determinations were made with the Krüger and Wulff method.

The excretion of phosphoric acid in the urine in gout has been found increased by some and diminished by others. Camerer found no special variation from the normal. There has been considerable discussion regarding the point as to whether the curves of the uric acid and phosphoric acid excretion run parallel in gout. When one considers that both are products of nuclein destruction, it would seem quite natural to expect that they should follow a parallel course. My own results, published elsewhere, indicate that in the intervals between attacks both fall far below the lower limits for normal, and that with the onset of the acute attack there is a parallel rise to the average or even to the upper limit for normal. Chalmers Watson and others hold that no constant relationship exists. They claim that phosphorus is taken in the food in other forms than that contained in the purin bodies, and that this prevents any possible parallelism in the curves.

Theories as to the Causation of Gout.—Only the more important theories can be here considered, and these very briefly.

Garrod's views regarding the causation of gout have already been given and need not be repeated here. After he advanced his theory, it for a long time received general acceptance. Even to-day the portion of it which attributes the excess of uric acid in the circulating blood to deficient elimination on the part of the kidney, is in accord with the results of the investigations of recent observers.

Haig is of the opinion that there is no increased formation of uric acid in gout, but that the blood is less alkaline than normal, and consequently less able to hold uric acid or its salts in solution. As has been shown in the earlier part of this paper, recent determinations of the alkalinity of the blood in gout by more reliable methods do not bear out the opinions of Garrod and Haig that it is reduced below normal. Haig has always claimed that it is the nitrogenous content of the food ingested that does damage in gout, rather than disturbances in the metabolism of the nitrogenous products of cellular disintegration. In other words, nitrogenous food is poison to the gouty-inclined individual.

It will be recalled that Sir William Roberts believes that uric acid circulates in the blood in the form of a soluble quadriurate, which may be represented by the formula $NaHC_5H_2N_4O_3$, $H_2C_5H_2N_4O_3$, which is sodium quadriurate. The sodium atom may have its place taken by an atom of any of the univalent metals. In the gouty state, according to Roberts, either from deficient action of the kidneys or from overproduction of urates, the quadriurate accumulates in the blood. The detained quadriurate, being very unstable and circulating in a medium rich in sodium carbonate, takes up an additional atom of the base and is converted into the biurate as follows:

$$2\,(NaHC_5H_2N_4O_3,\ H_2C_5H_2N_4O_3)+Na_2CO_3=4\ NaHC_5H_2N_4O_3+CO_2+H_2O.$$

The biurate is very insoluble and less easily excreted by the kidneys. It consequently accumulates in the blood, and exists first in a gelatinous and later in the almost insoluble crystalline form. It is then that precipitation is imminent or actually takes place. This is apt to occur where the circulation is poor and the temperature low, and in regions in which the lymph contains a relatively high percentage of sodium chlorid, as in the synovial sheaths.

This theory seems a very satisfactory one, but like all others has met with opposition, particularly on the part of Tunnicliffe and Rosenheim. Minkowski thinks that it is impossible for the uric acid to circulate even in the normal blood as the quadriurate, for in a medium so rich in carbonates and phosphates as the blood is, the quadriurate must necessarily be rapidly converted into the biurate. Minkowski thinks that the uric acid circulates normally in the blood in organic combination with nucleotin-phosphoric acid.

Ebstein holds that the local manifestations of gout are due to nutritive tissue disturbances which lead to necrosis. He found, after a study of many of the affected tissues in gout, that one change is common to all of them, independently of the uratic crystallization, and that is, a necrosis of the parts wherein such depositions take place. He believes that this tissue necrosis is primary, and that it is as characteristic as the biurate

deposit. Both changes must coexist in any tissue in order to constitute a truly gouty patch, and he has found such areas in the kidneys, in hyaline and fibrocartilage, and in tendons and connective tissue. He calls attention to an early stage of the necrosing process, in which as yet no deposition has occurred, and consequently maintains that nutritive tissue disturbance is the primary factor, and uratic crystallization the secondary one in the gouty process, the latter not occurring until after death of the damaged tissue. Von Noorden supports Ebstein's views, and believes that the tissue necrosis is due to the action of a special ferment.

In 1784 Cullen advanced the view that gout was primarily due to an affection of the nervous system. According to this view there is a basic, arthritic stock—a disthetic habit, of which gout and rheumatism are two distinct branches. The chief advocate of the nervous theory at the present day is Sir Dyce Duckworth, who at first thought that disease of a special tract in the cord was the cause of the tissue lesions in gout. Although he no longer insists that gout is due to a lesion of any particular column in the cord, yet he just as strongly insists that gout has a nervous origin. The influence of depressing circumstances, physical and mental, point strongly to the part played by the nervous system in the disease.

A few years ago Kolisch advanced the view that gout is due to the toxic effects of the alloxuric or xanthin bases. He found that with the Krüger and Wulff method these bases were increased in gout, because, owing to the disease of the kidneys, these organs are unable to convert the nuclein derivatives into uric acid in sufficient amounts. Owing to the subsequent demonstration that the method used was inaccurate, his views have not been accepted. Others have attempted to place the responsibility on the xanthin bases. It has been shown that the exogenous purins lead to an excess of nuclein derivatives in the blood stream, and that their presence can be demonstrated by suitable methods. There is no convincing proof up to the present date that the xanthin or purin bases are constantly increased in either the blood or urine of gouty persons. Undoubtedly some of these xanthin bases are definitely toxic. Kolisch, Croftan and others have produced arterial and renal lesions by injecting hypoxanthin into animals. I. Walker Hall[3] confirmed these results and also produced parenchymatous changes in the liver by long-continued injections of hypoxanthin. We shall have to await further evidence before stating that the xanthin bases play any factor in the production of gout.

It has been suggested that gout is due to a chronic intestinal intoxication, but evidence is still lacking to prove this theory.

THE PATHOLOGY OF GOUT.

The Blood.—In the section on etiology it has been shown that practically all competent observers have confirmed Garrod's findings first published in 1848, that the blood contains a marked excess of uric acid. This has been amply shown by quantitative determinations and by Garrod's well-known thread test. The latter may be performed with the separated serum of drawn blood or with the serum obtained by the application of a blister. To two drams of the serum add five or six minims of strong ascetic acid for each fluid dram and place in a watch crystal. One or two fine fibers of linen thread are then immersed in this mixture, and the whole placed in a cool place until the serum is quite set and nearly dry. Usually from thirty-six to sixty hours are required, depending on the warmth and dryness of the atmosphere. If uric acid be present in excess it will crystallize out on the thread in a manner resembling rock-candy on a string. The actual determinations showing the excess of uric acid found in the blood of gouty patients by various observers have already been given.

There is no special tendency to the development of anemia, and the leucocytes are usually within the normal range. It is of interest that one of our cases of tophaceous gout eventually died in the hospital of pernicious anemia, the blood picture being characteristic. Neusser claimed that occasionally an eosinophilia occurs, and Chalmers Watson found in one case, particularly during the acute attacks, that there were numerous degenerated myelocytes present in the blood. Neusser's so-called "perinuclear basophilic granules" have been shown to be artefacts, and to occur in the blood of individuals other than those suffering from gout.

The Joint Changes.—The pathologic alterations of gout manifest themselves particularly in the articular structures. The metatarsophalangeal joint on one or other side is usually first involved, and repeated attacks may occur in this joint, causing considerable thickening, before any of the other joints become affected. Later the tarsal, ankle, knee and small joints of the hands may be attacked. As Norman Moore has pointed out, the joints of the lower extremities may be alone involved. The arthritic manifestations are due to the deposition of the acid urates or biurates. There is considerable difference of opinion as to the cause of these uratic deposits. Ebstein insists that there is always a primary tissue necrosis probably due to the toxic action of the excessive uric acid circulating in the blood. These necrotic areas are most liable to occur in the joint cartilages and other articular tissues in which the normal nutritional currents are slow. No matter in what part of the body the biurates are deposited, Ebstein claims that a tissue necrosis is the primary factor. In support of his view, he states that he has often found areas in which there was necrosis without biurate deposition. In these areas of coagulation necrosis the reaction is always acid, so that the conditions are favorable for the precipitation of the quadriurates in the form of the crystalline biurate.

His and Mordhorst think that the deposition of the sodium biurate is primary, and that the tissue necrosis occurs as a secondary process. According to Sir William Roberts, the biurates are deposited most abundantly in cartilaginous tissue, because here the temperature is lowest, the circulation poorest, and in the case of articular cartilage, the percentage of sodium chlorid highest. Of the structures comprising the joints, the deposits take place first in the articular surfaces. The biurate is not actually on the surface. It is interstitial and is always covered over by a thin layer of cartilage. The deposit is usually thickest at the point farthest away from the circulation. Garrod showed that it is rare for the biurate to extend beyond two-thirds of the depth of the cartilage, and often not to this extent. It looks white through the superficial layer of unaffected cartilage and has a "chalky" appearance. Thin vertical sections of the cartilage made in the direction of the bone and examined under polarized light show

3. I. Walker Hall: The Practitioner, July, 1903, p. 74.

the crystalline character of the deposit. Its crystalline character may also be easily demonstrated by taking scrapings of the deposits, teasing out and examining in a drop of water under a cover-slip in the usual way.

With recurring attacks and as the disease becomes more chronic, the ligaments and fibrous structures about the joints ultimately become infiltrated with the biurate deposits, forming the so-called "chalk-stones" or tophi. When this stage is reached we begin to have the joint thickenings and deformities so characteristic of the disease. The tophi surrounding the joints are usually covered by skin, but in some cases, particularly in the case of the metacarpophalangeal joints, they may ulcerate through and appear externally. Not infrequently these periarticular tophi are readily seen beneath the skin. In cases of long duration the affected joints may become immobile, owing to the extent of the deposits. According to Wynne, the marginal outgrowths about the gouty joints are true exostoses. In acute attacks considerable effusion into the joints may occur. If death takes place during an acute paroxysm there are signs of inflammation, hyperemia, and swelling of the ligamentous tissues with effusion into the joints. Occasionally the joint fluid shows small whitish flakes, and these when examined microscopically are seen to be made up of acicular needles of sodium biurate.

A systematic examination of the metatarsophalangeal joints at autopsy would, I am sure, show gout to prevail much more frequently in this country than is generally supposed. They should be opened in all joint cases that come to autopsy, particularly in those cases in which the etiology is obscure.

Other Situations in Which Tophi Occur.—Wherever there is cartilage we may have the deposition of sodium biurate. Thus a common situation for tophi is on the helix of the ear. There may be one or more and usually the white biurate can be seen through the skin. Occasionally only a slightly inflamed reddish nodule is seen, and when opened the contents will very often show needle-shaped crystals of sodium biurate. If systematic examinations for tophi in the ears were made in every case of articular disease, many mistaken diagnoses would be avoided.

Tophi may also be present in the cartilages of the nose, eyelids and larynx. Occasionally they may be of enormous size on the tendo-Achillis. A point to remember is that they may occur in the subcutaneous tissue away from the joints. One of our cases had a large group of them over the sacrum. In two other cases they were scattered over the extensor surface of the forearm. They may be mistaken for the subcutaneous fibroid nodules of rheumatism, as they were in the early admissions of two of our series, and it was only on later removal and histologic examination that they were shown to contain sodium biurate.

Changes in the Kidney in Gouty Subjects.—Of the visceral lesions in gout, those in the kidneys are among the most important. A very large percentage of patients with chronic gout have evidences of chronic nephritis clinically, and may die with uremic symptoms. The kidneys may show depositions of sodium biurate in the region of the papillæ. These were first described by Castelnau. They are not so frequently found as we would be at first led to infer. Norman Moore found them in only 12 out of 80 cases. On section of the kidney the apex of the pyramids often shows minute points or streaks of whitish material. On microscopic examination, these are found to consist of crystalline sodium biurate, which is usually in the intertubular tissue, but which may also, as Virchow, Wagner and Lancereaux have observed, be in the lumen of the tubules. Ebstein holds that the primary renal changes producing these biurate depositions are a local tissue necrosis. Aschoff and Minkowski claim, on the other hand, that they have found the crystals extending from the periphery of the deposits into the surrounding renal tissue which showed no indications of death. These renal deposits must not, however, be taken to always mean the existence of gout in the individual, as they sometimes occur without the subject having had any symptoms of the disease. The type of kidney usually found at autopsy is the chronic interstitial form, the organ often showing an extreme grade of contraction. On the other hand, the arteriosclerotic type may occur. Here the kidney is rather larger than in the former, red, beefy and very hard. There does not appear to be any special difference between the kidney of lead gout and that of ordinary gout.

The Cardiovascular Lesions.—Gout is undoubtedly a very important etiologic factor in the production of arteriosclerosis. Nearly all cases of chronic gout show marked thickening of the peripheral arteries. Whether the arteriosclerosis be due to the effect of the increased uric-acid compounds circulating in the blood or to the contributory factors producing the gout, viz., alcohol, food and lead, has not been definitely settled. There is absolutely no question as to the frequency of its occurrence.

Cardiac changes are very liable to occur. Owing to the existence of the interstitial nephritis and arteriosclerosis hypertrophy of the left ventricle is likely to occur. The arch of the aorta is frequently involved in the arteriosclerotic process. The orifices of the coronaries may be narrowed and the coronary vessels themselves sclerosed. Myocardial changes occur and the hypertrophy gives way to dilatation, and death may result from failure of compensation. The coronary involvement renders the subject liable to attacks of angina pectoris. Gouty pericarditis is not an infrequent terminal event. It has been claimed that sodium biurate deposits occasionally occur in the heart valves.

Changes in the Respiratory System.—Emphysema is extremely prevalent in patients with chronic gout. Tophi may be present in the laryngeal cartilages and even in the vocal cords. Sodium biurate crystals have been found in the sputum of gouty patients.

SUMMARY.

Heredity, overindulgence in malt liquors, poor food with bad hygienic surroundings or overeating with insufficient exercise, and lead intoxication are undoubtedly important predisposing etiologic factors in the production of gout. An analysis of 54 cases treated in the medical wards of the Johns Hopkins Hospital shows that the overuse of fermented beverages seems to be the most potent factor in this country. Gout in the United States appears, therefore, in the majority of cases to be acquired or "free-hold," rather than "copy-hold" or inherited.

Studies of the metabolism in gout have as yet afforded no satisfactory explanation for the causation of the disease. There seems very little doubt but that it is due to disturbance in the metabolism of the "endogenous" and "exogenous" purins. As yet there is not sufficient experimental evidence to warrant us in abandoning the theory that the manifestations are in large part due to disturbances in uric-acid metabolism. Prac-

tically all researches agree in showing that the blood in gout contains a marked excess of uric acid, and the balance of opinion is in favor of the view that this excess is due to deficient excretion on the part of the kidneys. The alkalinity of the blood apparently is not diminished, as Garrod supposed.

The joint manifestations are essentially due to the deposition of the uric-acid combinations of the blood in the form of the crystalline sodium biurate. Whether a local tissue necrosis is primary or secondary to this deposition is a question still in dispute. Nephritis, usually of a chronic interstitial type, arteriosclerosis, myocarditis, pericarditis and emphysema are the other most frequent pathologic findings.

THE URIC-ACID DELUSION AND THE PREVENTION OF GOUT.*

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The first requisite to an adequate discussion of the prevention of gout is a clear view of its causation.

The one thing which, it seems to me, emerges clearly from the seething caldron of the clinical and chemical researches of the past fifty years is that whatever be the cause of gout it is *not* uric acid. The first step, then, is to rid our minds of the delusion, that any means which are to cure gout, must be directed toward either increasing or diminishing the formation or promoting the elimination of uric acid or any of its precedents.

I fear that to many this position will appear radical to the verge of foolhardiness, but it is the one which appears most rational and tenable to me, and I will, therefore, proceed to sketch very briefly its basis and its bearing on this most important problem, with no further apology, save for the apparent dogmatism of statement, which the necessity of brevity forces on me.

The uric-acid delusion in gout dates from the time of Garrod, and while its pursuit has proved a most fascinating one and added much interest to the study of dry pathologic problems, it has, in my judgment, proved an *ignis fatuus*, and directed our attention from the disease itself to a mere symptom. Under gout and lithemia we have lumped together an appalling array of morbid processes of infinitely varied causation, whose sole factor in common was that they resulted in the precipitation of urates in the urine, or in the tissues.

We have been treating an effect as a cause, a mere by-product as a *materies morbi;* and while the results have been interesting and stimulating, ranging from the brilliant and attractive speculations of Roberts up to the flatulent absurdities of Haig, yet it has led us little, if any, nearer to the truth than we were in Sydenham's time. As our modern conditions of life in respect to healthfulness and variety of food, housing, clothing and training have enormously improved, gout is far less common and lithemia certainly no more prevalent than before. But we can hardly flatter ourselves that we know how to treat it better. Our situation is another illustration of that blessed truth, that our belief, therapeutic or otherwise, makes little difference, if our life be rational.

The facts which seem to me have been firmly established by the enormous mass of clinical and physiologic researches of the past twenty-five years are briefly as follows:

1. Uric acid is not toxic.

2. It is in no sense a result of imperfect combustion of proteids of the urea series.

3. That uric acid which appears in gout is a result of the destructive metabolism of the nucleins of the body tissues, and is in no way derived from the food.

4. While some of the antecedents of uric acid, the so-called purin group, are more toxic than uric acid, it is exceedingly doubtful whether they are sufficiently so to account for the symptoms accompanying them. In short, they also are probably a symptom and not a cause of the intoxication.

Now, let us glance at the clinical basis for regarding uric acid solely as a symptom of some toxic or infective process, and consequently directing our attention toward the latter.

First of all, there is the significant fact, known from time immemorial, that all the lesions of gout, arteriosclerosis, degeneration of the kidney, neuritis, neuralgia, rhinitis, tophi, etc., may be produced by a poison, which is not only non-nitrogenous, but not even organic, and that is lead.

According to Garrod, 30 per cent. of hospital cases of gout give a clear history of chronic lead poisoning. Here there is no question of any specific influence on the part of the urates.

Second is the fact that a perfectly characteristic gouty urine is produced in the early stages of almost all febrile conditions, especially of the milder type. The urine in the early stages of a mild form of pneumonia can be hardly distinguished from characteristic gouty urine; and I am in receipt of a private letter from one of the clearest-eyed and broadest-minded of our modern pathologists, in which he informs me that experiments carried out in his laboratory have shown that inoculations with modified forms of various infective organisms have been productive of the appearance of urates in the urine and other so-called gouty symptoms, so that he is inclined to class gout as one of what he terms the "subinfections."

Third, the most frequently assigned cause for the production of the excess of urates which, in their turn, after the fashion of the "house-that-Jack-built," are supposed to produce the morbid symptoms which they accompany, is an irritant, carbohydrate poison, namely, alcohol. Waiving altogether the wrathful question as to how much of the sufferings of gouty patients are due to alcohol which they imbibe and how much to the fruit sugars and esters which accompany it; (wine and beer are your true gout producers; whisky and spirits seldom are); and admitting that the liberal use of alcohol, particularly in the form of spirits, may have no injurious effects, even on gouty individuals, yet there can be but little question that there is an overwhelming preponderance of the use, and in many cases excessive use, of either malt or vinous liquors in those who are the subjects of gout.[1]

In the light of the toxic origin of the disease it would seem highly probable that we are actually dealing with a direct intoxication, either by alcohol itself, or, as seems more likely, by some of the other readily fermentable carbohydrates, either of the ether, ester or acetone group, in which the sweeter, more fruity wines, which are so indefinitely more effective in the produc-

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Pharmacology, and approved for publication by the Executive Committee: Drs. C. F. Butler, Solomon Solis-Cohen and C. T. Osborne.

1. The Meaning of Uric Acid and the Urates, The Lancet, Jan. 21, 1903.

tion of gout than any other form of alcohol, are particularly rich. So that we appear to have two instances in which toxic substances, formed entirely outside the body, are capable of producing the disease—not only so, but are probably responsible for something like 50 per cent. of all cases.

As we study more carefully each individual case of the disease which confronts us, I think we can hardly help being more and more inclined to the conclusion that we have to deal either with some form of more or less direct external intoxication, or with some impairment of the normal digestive and assimilative processes of the body, resulting in abnormal poisonous products being formed in the alimentary canal, or in excessive absorption of the toxic substances which are normally present in the process of digestion. I believe that in the future our study of the diet of a gouty patient will be more with reference to the detection of substances which, either in themselves or in the conditions of nutrition obtaining in the cells of his intestinal wall or possibly of his liver, are capable of producing intestinal putrefaction and consequent autointoxication than with reference to either their nitrogen or nuclein content. Nowhere is it more necessary to remember, as Roberts and Osler have with special emphasis reminded us, that in the witty paradox of Moxon, "it is quite as important to know what kind of a patient the disease has got, as to know what sort of a disease the patient has got." Time and again we have found that the question of our ability to relieve our patients from the torture of their toxemia has depended on our ability to correct some vice of bodily habit. It may be in exercise, in bathing, in sleep, in mental stress, in hurry after meals, even in errors of refraction, that the crux of the lithemic problem will be found to lie. Any agency that will improve the general nutrition and vigor and raise the resisting power of our patients may cure lithemia.

Fourth, we have the negative evidence that numerous diseases or states in which large quantities of uric acid are found both in the urine and in the tissues are unattended by any gouty or so-called lithemic symptoms, as the uric-acid showers in the urine of children, the uric-acid infarcts of the newly born, in the large quantities of urates found in the urine of leucocythemia, of acute yellow atrophy of the liver and of phosphorus poisoning.

Fifth, the behavior of the paroxysm in gout is as little reconcilable with the theory of its causation by uric acid as are the Four Gospels with one another, but it fits in perfectly with the view that it and the paroxysm are alike symptoms of some toxic influence. Preceding and in the first stages of the gouty attack there is, instead of an increased elimination of urates, marked diminution. Secondly, there is no proof whatever that at the height of the attack there is any excessive deposit of urates in any of the tissues or in the urine. Thirdly, after the symptoms begin to subside urates appear in abundance in both the urine and the tissues; in short, the whole history of the gouty attack points strongly toward the view that it is due to some active toxin which produces intense irritation in the muscles, nerves and joints, with severe pain and consequent rise of temperature, and, as a result of this toxic attack, the breaking down of an excessive number of cell-nuclei and their appearance in the urine as urates.

Sixth, as Futcher has shown, the rise in the excretion of urates in both gout and mild febrile conditions is accompanied by an absolutely parallel increase in the amount of phosphoric acid in the urine. Inasmuch as nuclein is made up of a purin base combined with nucleic acid, an important part of whose radical is phosphoric acid, it seems to me that the conclusion is almost irresistible that in the elimination of these two products we are dealing with simply the two results of a destructive metabolism of the body cells, uric acid representing the purin moiety, while phosphoric acid represents the nucleic acid element. In my judgment, the symptoms of gout may be just as rationally ascribed to phosphoric acid as to uric acid; both are products of an underlying intoxication. In short, I believe that under the head of gout we have grouped together an enormous variety of mild chronic intoxications, sometimes of infectious, sometimes of dietetic, other times of autotoxic origin, and that the sole unity of the group consists in the production of uric acid.

The "lord of diseases" is not an individual, but a host. Uric acid has been the same sort of convenient saver of thought to us as therapeutists that the devil was to the older theologians.

It is always a great satisfaction to be able to give a disease a name, even if you know little more about the name than you do about the disease.[1]

But one great rock remains for the foundation of our uric-acid faith, massive and apparently unshaken, and that is the actual appearance of the *corpus delicti* in the joints or fibrous tissues in gout. But here, again, I believe we have utterly mistaken the meaning of appearances. Here, the enthusiastic Garrodite will say, is something which no amount of argument will explain away. The matter, however, is by no means so simple as might at first sight appear. In the first place the results of the injection of uric acid into living tissues and its occurrence in large amounts in the kidney and other tissues in leukemia and other conditions already alluded to, render it highly improbable that uric acid itself, even in the tophi of gout, is sufficiently toxic to account for the intense irritation and local inflammation. In the second place, we have large masses of these biurate crystals deposited in the tissues in gout without giving rise to any symptoms whatever, or even attracting the attention of the patient. Third, the occurrence of these deposits in the joints or other tissues does not by any means accurately coincide with the attack, but may either precede or follow it. No one would, for a moment, think of regarding the fibrous nodules of rheumatism, or the exostoses of rheumatoid arthritis as the cause of the excruciating pain, or any other of the morbid processes which they accompany; and, in my judgment, the masses of urate of soda in and about the joint are just as purely symptoms of a toxin attacking the joint tissues as are the deformities of the two other great arthritic diseases. It would seem highly probable that we have been grouping together in one heterogeneous mass, as "gout," all the chronic intoxications which happen to attack the joints and result in the production of urates in their neighborhood, just as we have probably grouped together under the title of rheumatism a number of varied acute streptococcic or staphylococcic infections attacking the joints (one of which has already been definitely split off as gonorrheal "rheumatism"), and under arthritis deformans at least three different toxic or toxoneuritic processes. Moreover, we have also in rheumatism a by-product of cellular destruction, lactic acid, which has been alleged to be the toxic element, just like the uric

acid in gout. An excess of phosphoric acid is said to occur in rickets. All of which are pure symptoms.

Next arises the important question, Are the masses of urates which occur in the tissues surrounding the joints deposited there from the general circulation, or are they local products? In my judgment, chiefly the latter.

First of all comes the overwhelming testimony of modern physiologic chemists, from Horbaczewski, through Burian and Schur to Chittenden and Croftan, that no excess of uric acid is to be found in the blood of the gouty. In fact, it is exceedingly doubtful whether uric acid is to be detected in the blood at all during life; so that the beautiful iridescent vision of Haig and his school, of glittering needle-shaped crystals, darting hither and thither in the blood stream, thrusting their tiny javelins into nerve, into synovia, through liver cell or kidney tuft, like a swarm of internal mosquitoes, rousing the entire organism to agonized protest, must go the way of other day-dreams.

As was long ago pointed out by Levison, the particular node of tissue which becomes the site of these urate infarcts shows distinctly signs of necrosis, which has preceded the formation of the urates. In short, granted our toxins, of widely varying origin, external or internal as the case may be, these will attack the tissues in the neighborhood of the joints as regions of least resistance, slowest circulation, and lowest vitality in the entire body. The tissues of the joints die *in situ*, and with the assistance of the leucocytes which were summoned to their aid, break down into masses of urate of soda and into phosphoric acid, which latter is usually swept away in the blood current and into the urine. Or if a sufficient amount of calcium salts be present and the other conditions are favorable, they proceed to form exostoses (calcium phosphate), which are so characteristic of chronic gout.

Next, we have the striking fact that in the gouty an injury to the affected joint may precipitate an acute attack, as anything which lowers the local resisting powers of the tissues renders them more susceptible to the power of the toxin. It is precisely those two joints in the body which are most exposed to an infinite variety of blows, contusions and strains, namely, the joints of the great toe and of the thumb, which are most susceptible to gouty attacks, and of the two, the one which bears the weight of the body and is at least twice as frequently exposed to these risks—the toe—is far the heavier sufferer of the two.

The question still remains, Why are such deposits confined to gout, and why do they attack so exclusively the joints and bones? If, however, we regard "gout" as simply a term applied to the reaction to a wide variety of poisons in patients of a certain middle grade of resisting power, the objection loses most of its force. Tophi form in the gouty in response to any intoxication because the cells have sufficient resisting power to, so to speak, die in opposing its action and form urates. They do not in the acytic because the cellular resistance is absent—the body submits without a struggle, as it were—nor in the hypercytic, because the resisting forces are sufficiently abundant to neutralize the poison, and if necessary, to dispose of their own casualties as well. Besides, this deposit is not confined to true gout, but occurs in chronic plumbism. In fact, we have agreed to term as gout all these chronic toxic processes which result in irritative lesions in or near the joints, attended by the production of urates and of calcareous concretions. I see no more reason for considering all these of common origin than I do for regarding all processes which are attended with the formation of an excess of fibrous tissue, in the same regions, as due to a common cause, nor can I see that the occurrence of calcareous deposits in the neighborhood of the joints has any other significance in gout than their appearance in the scar resulting from the healing of any other chronic inflammation, such as tuberculosis of the apex.

The question of the tendency of living tissues to deposit calcareous masses or plates is an exceedingly wide one, and far from being clearly understood, but there is one singular coincidence which runs throughout the whole series from the first multicellular organisms up to man, and that is that this deposit is almost invariably either preceded by, or associated with, an accumulation of nitrogenous excretory products of the urea or uric-acid series. For instance, in the well-known coral polyp the lime is deposited on the outer surface or ectoderm, by frank precipitation of the sulphate of calcium in the sea water by means of carbonate of ammonia, into which the urea and other excretory products are decomposed; and as the researches of Irvine, Murray and Woodhead have shown the rapidity of coral building is in precise ratio to the amount of ammonium carbonate and other excretory products of the organism present in the sea water.

In the shell of the mollusc we have a similar relation; all the tissues which are engaged in the deposition of the shell are loaded with uric acid and guanin. A step higher we have the shell of the crab, in which the lime salts are deposited within the bodies of the superficial layer of cells, which latter are simply saturated with uric acid and urates; and, finally, in the formation of the mammalian bones we find a similar state of affairs. What the precise chemical process which is taking place is it would be difficult to say. In the earlier stage, lime is present in sea water in the form of a sulphate, and is deposited almost exclusively as a carbonate; in the shell of the crab it is carbonate with a moderate percentage of phosphate, while, finally, in the bones of the mammal the phosphate comes to predominate and the carbonate plays a small part. All that we can say is that the presence of excretory products of the purin or carbamide series appear to favor the deposition of lime salts, whether in the shape of coral, oyster shell, crab shell, bone or the bony nodules of gout.

One is almost tempted to suggest that what is taking place is a process of slow necrosis of the cells concerned, with the formation, as products, of the purin bodies on the one hand, and on the other of phosphoric acid. This last uniting with the lime salts brought by the blood forms phosphate of lime as the final deposit. However, the reaction is probably not so simple as this. But I am inclined to believe that in the urate deposits of gout, followed as they so frequently are by calcareous masses, bony nodules and exostoses, we have simply a misplaced process of formation of bone and shell, and that the production both of urates and of calcareous deposits is simply one of the incidents in slow, chronic, non-suppurative tissue-necrosis.

Another fact which makes this view more probable is that when we turn our attention for a moment to the formation of calculi as such, whether in the urinary passages, the salivary ducts or the intestines, we have precisely this same significant occurrence of, first, uric acid, second, lime deposits. I think the opinion is gain-

ing ground that in all these processes we have to do not with a mere chemical and mechanical precipitation of salts from the fluids of the urinary or salivary tracts, but a genuine deposition of successive layers by living cells in the attempt to cover up a morbid foreign body, such as gives rise to the pearl in the oyster.

Von Noorden's discovery that calculi, wherever found, whether in kidney or bladder, were covered by a proteid film, was remarkably suggestive, and indicates strongly that these bodies are the product of living cells, probably clusters of leucocytes, out of the bodies of which are formed at one time masses of uric acid, thus giving the well-known alternate layers of calculi, at other times calcareous plates.

There is another side to this question, but that would carry us far beyond the limits of this paper, and that is, that in these deposits of calcium we probably have an important neutralization of toxins going on. This certainly is the rôle of lime in the vegetable organism, as the fascinating researches of Oscar Loew have shown, and it is to my eye distinctly significant that three of our most serious chronic intoxications, namely, rickets, rheumatism and gout, are associated with a marked disturbance of the normal deposition of bone. Whether the abundant calcification which is going on normally all over the body has anything to do with the immunity of children from so-called gouty symptom, has long seemed to me to be a question worthy of consideration. I am afraid this will seem like somewhat of a far cry from my original subject, but the gist of it is, to my mind, that the whole series of peri-arthritic changes in gout are simply the symptoms of slow chronic intoxication, with local necrosis, at points of least vitality. The invertebrate dies and calcifies on the surface, the vertebrate at the core.

Definitions are dangerous things, but I am willing to cause my opponents to rejoice by attempting one. I would define gout as "any form of mild, chronic, intoxication occurring in an individual of a medium grade of resistance and resulting in the deposit of uric acid, or the urates in the tissues or urine." In other words, it is a symptom name, pure and simple.

When, however, we turn to the question of prevention, our attitude is by no means so hopeless nor so indefinite as might have been feared. In fact, there is almost excuse, from a therapeutic point of view, for preserving the unity of gout. It is one of the many triumphs of our good, old, hit-and-miss, survival-of-the-fittest, empiric medicine that it has managed to stumble on the right treatment for many disturbances concerning whose causation it was widely and utterly at fault. We knew that quinin cured malaria long before we ever dreamed of the hematozoon, and our treatment of gout and lithemia is infinitely more rational than our pathology. Here, as elsewhere, creed is of little consequence compared with conduct. The first thing, of course, to be done is "*chercher la femme*," and find out the particular cause of intoxication in each individual case. This is, of course, far easier to say than to do. But no class of cases will better repay the time spent in an elaborate and exhaustive search in this regard. No part of the patient's body, or I had almost said mind, should escape our scrutiny, from the roots of the teeth and the condition of the gums to the state of his refraction and the possibility of lead under his finger-nails. Every possible source of either infection, or simple disturbance of metabolism, should be passed under review.

In many cases the infection will be an autointoxication, simply due to perversion of normal metabolism, and its cause may be sought in an error of refraction, in mental worry, in grief, or overstrain. In other cases it may be a distinct external infection, such as a suppurative process about the roots of the teeth, a septic condition, with shallow ulcerations, of the septum, or turbinated bodies, or an acne, with its steady, persistent absorption of minute traces of pyogenic matter. In one case which I have under observation at present a furunculosis of nearly a year's standing has resulted in the production of enormous showers of uric acid in the urine. A large majority of the cases, however, will be found to be of autotoxic, and more or less directly intestinal, origin, and here is where our "old reliable" remedies in gout have won their laurels. First, and most important of all, we have the great group of alkalin laxatives, which, both by checking the acid processes of fermentation in the alimentary canal and sweeping the putrescent matters out of the system before they have time to give off their poisonous products to the blood, enormously relieve the situation. Next in order, the group of intestinal antiseptics which directly prevent fermentation in the alimentary canal, like the salicylates, calomel, guaiacum, phenacetin, menthol and all the aromatic group. And, thirdly, the simple alkalies which act by reducing the acidity of gastric digestion and possibly, to a certain extent, by directly neutralizing the toxins, which are usually acid in reaction, and by producing mildly laxative effects. Lastly, renal, cutaneous and other eliminants, like colchicum, the iodids, acetates and niter. In short, almost every remedy which clinical experience has proved to be of value in gout and the gouty state will be found to prevent the formation or absorption of intestinal toxins or to promote their elimination from the system.

As we well know from clinical experience, some one or combination of these remedies will usually give our patient at least temporary relief.

Heterodox as it may appear, I believe the question of diet can be dismissed almost in one sentence, and that is, direct such food as will in each individual case reduce intestinal putrefaction to the minimum, while abundantly supporting strength.

Meats as such and proteids as such have absolutely nothing to do with the production of gout. Some of the worst cases we see occur in women living almost exclusively on bread and butter, potatoes, sweets and tea.

As a matter of practical experience I have found it much more frequently necessary to limit my gouty patients in regard to potatoes, bread, pastry and preserves than in respect to meat of any sort. In a majority of cases the fault does not lie in the diet at all, except insofar as it is deficient in nutritive value, or excessive relative to the actual needs and combustion powers of the body. The value of a vegetarian diet in gout is chiefly due to its unattractiveness. Vegetarianism is merely a polite form of starvation, and where this is indicated it will be of value. In the long run, it will usually be found better to regulate the diet of our gouty patients by increasing their oxidation than by diminishing their intake.

Above all, let there be water internally, externally and eternally. First, because our digestive processes are processes of hydration, and water is a valuable aid to digestion instead of a hindrance, according to the ridiculous old nursery superstition of the last generation. Second, because it is the finest eliminant, whether alimentary, renal or cutaneous, that we possess. Third,

because 99 per cent. of our body cells are still aquatic organisms and marine at that, and must be kept flooded with water in order to live. What salts are dissolved in the water aforesaid is purely a matter of taste. The one active agent in all mineral waters is H_2O.

DISCUSSION

ON PAPERS BY DRS. SOLLMANN, MENDEL, FUTCHER AND HUTCHINSON.

DR. HEINRICH STERN, New York City—Dr. Sollmann stands entirely on the modern basis. His paper confines itself entirely to physical conditions and signalizes a decided advance in the conception of the intrasystemic processes. In connection with Dr. Mendel's paper, I wish to again draw attention to Weinland's experiments and the deductions which we may derive therefrom. Normal quantities of antipepsin apparently control peptic digestion and prevent lesions to the gastric walls. Antitrypsin may act similarly as a protector of the small intestines. The round gastric ulcer, which in reality is not an ulcer at all, but a circumscribed necrotic spot, probably the consequence of autodigestion, may be due to absence or insufficient amounts of antipepsin. The same may be surmised as regards the duodenal and other intestinal ulcers which may follow the deficiency of antitrypsin. However, these conceptions of autoprotection are too good to be true. We may accept them for lack of something more definite, but we have to accept them *cum grano salis*. I wanted to hear Dr. Futcher say something about the natural and normal solvent power of human blood serum. According to the more recent investigations, uric acid occurs in normal amount in the urine of the gouty. Blood uric acid is absolutely and relatively increased in leukemia; its amount is not augmented in gout. The occurrence of uric acid in the blood of gouty and nephritic conditions is due to its retention therein. In nephritis, the insufficiency of the kidneys is at fault; in gout, the presence of uric acid is the result of the deficiency or quality of the physiologic uric acid solvents. Concerning the statements of Professor Chittenden, we all appreciate the far-reaching deductions which his later experiments permit us to draw. I have done considerable work in the same field, but, naturally, I have undertaken more experiments with diseased than with normal individuals. Some of my data are published in the *Medical Record* of May 21, this year. I wished to cite some of Professor Chittenden's results, but could not obtain a copy of his paper read in Washington in April last. I find that we may well get along with a nutriment 20 per cent. less than usually employed. This is especially the case in certain of the wasting diseases where the digestive, elaborative and assimilative functions are at the bottom of the underalimentation. Here we must prepare the organism to utilize the ingested food properly and must not try to administer larger amounts of foodstuffs. In such cases, overfeeding may be truly harmful. In further corroboration of Professor Chittenden are two cases of Hirschfeld cited in my aforementioned article. A woman subsisting on a diet the nutritive value of which never exceeded 1,650 calories per day, gained thirty kilograms in six years. The other case, also a woman, was kept in metabolic balance on a diet of from 1,380 to 1,570 calories.

DR. FENTON B. TURCK, Chicago—Our ideas to-day are very much those of Stahl in the eighteenth century. He had the idea that the "sensitive soul" protected the body from material agents; the "soul" kept the body from injury. John Hunter recognized this influence, which he thought was due to "vital power," as he named it. We have to-day the same idea of "vital resistance of the tissues," essentially the same as Stahl. In my experiments to produce gastric ulcer, I have found that bleeding or loss of hemoglobin was not sufficient to produce gastric ulcer. The ulcer will rapidly heal up even with a deficiency of hemoglobin. By repeated intravenous injections of colon bacilli I found that ulcer of the stomach could be artificially produced. The normal sera of animals do prevent the digestion of a piece of the gastric mucous membrane with pepsin and hydrochloric acid in a test tube, while the sera of animals injected with bacilli allow digestion to take place in twenty-four hours. The products of the growth of colon bacilli produce no effect. It appears that the presence of the living bacteria alters or exhausts some substance in the serum which under normal conditions interferes with the local digestion of the mucous membrane. This has great significance when applied to the pathogenesis of many other diseases.

DR. BOARDMAN REED, Philadelphia—Did Professor Chittenden, in his experiments, carry out the views of Horace Fletcher as to overmastication of the food so as to promote better digestion and assimilation? This theory of Fletcher's that prolonged chewing makes food go further in nourishing the body, seems to have some reason for it. Did Professor Chittenden make any experiments on persons who are dyspeptics—those who have fermentative trouble? It is one thing to cut down the diet of persons in health and quite another in the case of those who have much fermentation in the alimentary tract involving a loss of part of the nutriment by the action of bacteria. It would be interesting to know, therefore, whether any of the subjects of Professor Chittenden's experiments suffered from much fermentation in the alimentary tract involving a loss of part of the nutriment by the action of bacteria. It would be interesting to know, therefore, whether any of the subjects of Professor Chittenden's experiments suffered from either gastro-intestinal inflammation or fermentative dyspepsia.

DR. H. R. CHITTENDEN, New Haven, Conn.—We had one particular experiment on a man who for two years had had considerable trouble which he called dyspepsia; it might have been gastritis. He was troubled with the usual symptoms of discomfort, flatulence, etc. In this man the food was cut down to nine grams of nitrogen a day, instead of from 16 to 18, which he had been taking. His condition improved and his digestive trouble is nearly over. We have not experimented with overmastication or insalivation. Our object has been simply to ascertain the minimal proteid requirements of the healthy man with a view to seeing if great physiologic economy in diet is not possible.

DR. S. SOLIS COHEN, Philadelphia—Dr. Woods Hutchinson's fascinating paper controverts established traditions, but doubtless has some fundamental truth. I have seen in subjects of lead poisoning sodium urate concretions in the joints. Perhaps had we heard all the facts back of his opinions, his views might have been more convincing. There is this, however, to be said: Uric acid or the alloxuric or purin bodies, altogether, or any one of them alone, can not produce gout; and their presence is not to be considered as solving the problem of pathogenesis. Like albumin in nephritis, sugar in diabetes, these bodies are symptomatic, products of the faulty metabolism characteristic of the disease, though they may and do, in turn, cause many secondary symptoms. We must go back further for the cause. Mere words are not satisfactory—metabolism is too much like Mesopotamia—but words must answer while facts remain undiscovered. There are many persons whose condition can only be explained on the ground of a peculiar chemistry of cell-function—an abnormal normality—which they have usually inherited. Less frequently it is acquired. In treating the various disorders of these gouty patients we must recognize this fact of constitutionally abnormal cell-chemistry, and, at least for the present, our recognition of this condition and our plan of treatment must be based on the qualitative and quantitative variations of the purin bodies in the urine; this quite apart from the question of production versus elimination. Thus limitation in the dietary is often an advantage. But the mere fact that uric acid and alloxuric bodies happen to be found in the urine at one time or are absent at another, does not give a rational basis for a theory of pathogenesis or therapensis. Our established treatment usually helps the patient, but in this, as in most other relations, art has outrun science. Dr. Edward Blake of London points out that the children of these persons commonly called lithemic, usually present deficient vasomotor control. The mutual inter-relations of the vasomotor nerves and the body chemistry is a question deserving further study.

DR. HARVEY W. WILEY, Washington, D. C.—One object in living is to have our ideals shattered. As a boy I saw that

prominent men had the gout, and it was my ambition to attain that dignity in my old age; but I am convinced, after hearing the papers that have just been read, that I shall never be able to achieve it. A short time ago I was called on to address a society of New York farmers. They were a peculiar kind of farmer, as each one was worth not less than $25,000,000. I looked around and saw that there was not one who did not measure more around his stomach than around his lungs. I said at once: "You measure too much around your waists; no one has a right to measure more around his stomach than around his lungs. It is a dietetic crime." Probably since the time of Adam we have been eating too much nitrogen. What the ultimate effect will be on the race we do not know, but as we have several million years more to live it will probably be seen in the course of time. What we are now is due partly to the fact that our parents have eaten so much nitrogen. Professor Chittenden has shown that for six months a man can get along with much less. What the effects would be if kept up for a million years we can not say. Some months ago I said that it was not necessary to eat meat in order to be brave, as I learned to believe in my youth, a fact which has been demonstrated in recent military operations in the far east. It has also been shown that a man who eats rice can pull a jinrickisha containing a man weighing 165 kilograms, and at the end of the day be fresher than the man he carries. Dr. Futcher said that alcohols that are distilled have not as much influence in causing gout as those that are fermented. Possibly it may be the substances associated with the alcohol in the fermentation process rather than the alcohol itself. As to the activity of lead in the etiology of gout, a great many persons are taking lead in their food without knowing it. Canned goods are kept in tins containing lead and are soldered with an alloy containing at least 50 per cent. of lead; there are pellets of this solder inside of many of the cans. Much more might be said about dietetics and metabolism not germane to this discussion, but there is one thing that is germane to therapeutics and that is food; and the physician who, in his treatment of sickness, neglects food throws out of his armament his most useful weapon.

DR. CLEMENT B. LOWE, Philadelphia—Dr. Reed spoke of overmastication. The rule is undermastication. Dr. Mendel said that food in the fundus of the stomach is not acted on by the gastric juice and that this action is confined to the pyloric portion. We have been taught that the acid secretion of the gastric juice is able to overcome the action of the ptyalin of the saliva, and that the conversion of starchy foods into maltose will stop soon after the food enters the stomach. Now it is stated that the gastric contents do not become acid as soon as we thought they did. If so, this gives a longer time for the conversion of starch into maltose in the stomach. Professor Brunton said that we ought to chew our food well; we should chew meat 32 times to give every tooth a bite; it would be better to chew it 64 times. Ordinarily, therefore, we do not chew our food sufficiently. Starchy food, especially, should be well mixed with saliva before going into the stomach. In this way it finally passes into the intestine in the form which is intended by Nature. I agree with Dr. Osborne and Dr. Chittenden that, as a rule, we eat too much. The Irish people are not the best supplied with food but they are the healthiest people on the face of the earth.

DR. FENTON B. TURCK—I have recently published some work in which it is shown by experiments on animals that excessive distension of the stomach results in fatigue of the gastric muscles with atonic dilatation of the stomach. When food, water or air is introduced into the stomach of an animal in excessive quantities, sufficient to cause marked distension and retention, fatigue with elongation of the gastric muscle occurs. Changes in the musculature are observed microscopically; cloudiness around the nuclei which do not stain well. I believe that this condition frequently occurs in children who are allowed to eat too much and too frequently, and to swallow large pieces of food unmasticated. The habit of overeating and not properly masticating the food continues through life, followed by a variety of serious ailments. Stagnation occurs, with consequent bacterial growth. In the majority of cases of atonic dilatation of the stomach I find the history of error of diet. The muscles of the stomach can not properly triturate the food in the normal time; detention ensues and the food is only slowly expressed through the pylorus. The food mass is thus infected and the colon bacilli develop abnormally in the intestine. Micro-organisms that enter the circulation from the intestines are readily destroyed under normal conditions. When the altered cultures are developed in excessive numbers the tissues are injured by toxins obtained from the bacteria as these are disintegrated by the blood. The alloxuric bodies may thus be readily precipitated from the blood at the injured parts.

DR. T. B. FUTCHER—I gather that Dr. Hutchinson holds that gout is of toxic origin, or that toxins may give rise to the symptoms. Whether the uric acid or the alloxuric bases are at fault is still a disputed point. At one time I was of the opinion that the alloxuric bases were decidedly increased in patients suffering from gout. Kolisch had advanced this view some years before. Both his analyses and my own were made by the Krüger-Wulff method, which has since been shown to be inaccurate. The balance of opinion at the present day is still in favor of the view that disturbance in uric acid metabolism is the main etiologic factor in the production of gout, although it is quite possible that the other nuclein derivatives may play a part. I was not able, in the time at my disposal, to take up many points in connection with the etiology and pathology that I wished to. Ebstein thinks that the joint changes are primarily due to local tissue necrosis, with secondary deposition of sodium biurate. His, Mordhorst and Minkowski believe, on the other hand, that the uric acid deposition is primary and the tissue necrosis secondary. Dr. Stern inquired in regard to the solvent power of the blood serum in gout. Many have claimed that it is reduced, holding that the lowered solvent power is due to a diminished alkalinity of the blood. Determinations of the alkalinity of the blood with more modern and reliable methods seem to show that there is no particular reduction in the alkalinity of the blood in gout. I would like to say further that in gout the blood serum is not saturated with uric acid. Klemperer has shown that the blood serum of gouty individuals is still capable of dissolving a considerable amount of uric acid, although not so much as normal blood serum does. Dr. Wiley has brought up a subject which I have discussed more fully in my paper. It has been suggested that the injurious effects of the fermented liquors are due to the sugars and saline matters which they contain, as well as to the fact that many of them are decidedly acid in reaction.

DR. H. C. WOOD, JR., Philadelphia—I sympathize with Dr. Wiley. I think that most of us have derived great consolation, when we had a lithemic outburst, by picturing the deposit of uric acid. It disturbs us to have these views roughly dispelled by Dr. Hutchinson's paper.

LACERATIONS OF THE PELVIC FLOOR;

THE PRINCIPLES INVOLVED IN THEIR PRIMARY AND SECONDARY REPAIR.*

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Fortunately for the physical welfare of women, practical unanimity exists among obstetricians regarding the advisability of immediate repair of a laceration of the pelvic floor after labor. Unfortunately, the ultimate results of such an operation are frequently not at all satisfactory, prolapse of the vaginal wall necessitating secondary operative procedures at a later date. The lack of success attending the primary operation is to be at-

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. J. H. Carstens, A. Palmer Dudley and L. H. Dunning.

tributed to one of three causes, or to a combination of all. First, failure on the part of the operator to appreciate the extent and direction of the subcutaneous tear; second, failure to approximate the edges of the torn muscle and fascia; third, an overstretching of the muscles of the pelvic floor, which can not be overcome or modified except by denudation and suturing of the vaginal wall, an unjustifiable procedure at this stage of the puerperium.

We know that any tyro in medicine may readily recognize a tear of the vaginal wall or perineum after the birth of the child, and may introduce sutures which will coaptate the edges of the superficial wound, but every obstetrician of experience is aware of the extreme difficulty or the impossibility at times of recognizing a subcutaneous separation of the levators and fascia, and of approximating their torn edges. An important complicating factor in the ultimate prognosis in practically every case in which the certainty of separation can be eliminated is that of overdistension or overstretching, for it is impossible to determine if the paralysis has passed the point at which it will not be amenable to natural correction as involution progresses.

T. A. Emmet was the first to draw attention to the fact that the dynamic agents attendant on the passing of the fetus through the birth canal were analogous to those brought into play by the forcing home of a piston, the point of greatest resistance being at the outlet; consequently, an abnormality in these forces or in the size of the presenting part or in the resiliency of the tissues at the introitus naturally resulted in the giving way of the structures subjected to the greatest amount of strain, the perineal body and certain of the muscles forming the floor of the pelvis. This separation, he pointed out, was to be likened to the drawing aside of curtains below which were united above.

This view of Emmet's is in strict accordance with the anatomy of the parts, and has been generally upheld. We know that, in the great majority of cases, the separation begins in the median line, extends as far as the perineal flexion, and then may radiate to one or both sides along the vaginal sulci. Under these circumstances not only are certain important fibers of the levator ani muscle ruptured, but, what is of far greater consequence, the rectovesical and rectovaginal fasciæ are also torn, and the vaginal tube is thus bereft of the greater portion of its natural support.

Theoretically at least, the primary operation should more nearly restore the pelvic floor to its original condition than an operation performed months or years subsequently, and for a very simple reason. At this time the edges of the muscle and fascia are raw, and if approximated by properly introduced sutures, will unite. It seems to me that failure in the primary operation, existing pathologic conditions being recognized, is directly due, in the largest number of cases, to the improper insertion of the sutures. I maintain that if the factor of irremediable overdistension could be eliminated proper, that is to say, deep, sweeping suturing would reduce the failures to a very small per cent. It has been estimated that fully 35 per cent. of primiparæ suffer injury to the pelvic floor at the time of confinement. It is a question in my mind if, in the case of every primipara in which the physician in attendance is in doubt as to whether separation of the levator and fascia has occurred, it would not be wise for him to introduce sutures in such a manner as to remedy the possible defect. I am not unmindful of the fact that, for many reasons, this plan would not be practicable, but the principle of the good it may accomplish remains.

The great number of technics that have been devised to correct prolapse of the posterior vaginal wall and relaxation of the muscles at the outlet, indicates the important place such correction holds in the minds of gynecologists, yet I have long been convinced that there exists a pronounced misconception as to what is really accomplished by the several procedures. Take the well-known Emmet operation, for instance. At the meeting of the American Gynecological Society, held at Atlantic City in May, 1902, in summing up the subject of pelvic floor lacerations, one of the essayists expressed himself as follows:

"The principles underlying the repair of laceration of the pelvic floor, which Dr. Emmet gave to the profession in 1883, have been generally accepted as correct. This being so, it seems proper for this society to stand by these principles and for us to devote our energies rather to perfecting details of operative technic than to devising operations opposed to the well-established principles of Emmet."[1]

I find it impossible to accept this view. No gynecologic surgeon of to-day or in time to come can fail to freely acknowledge his debt to this brilliant teacher, Emmet, and in the light of almost universal acceptance of his opinions regarding pelvic floor laceration and repair, it appears heretical to question their soundness; but it is a fact, easily proven nevertheless, that the operation devised by him for the correction of posterior wall prolapsus does not accomplish what he alleges for it. He directs that "a point in the middle of the projecting mass within the vagina be picked up with a tenaculum and drawn forward and upward toward the neck of the bladder, when two folds will be seen leading up to a point within the sulcus on each side." I have never heard his assertion disputed that these points indicate the limit of retraction and show clearly that the portion of the vagina above is still properly supported, yet these sulci may easily be demonstrated by the same means in many cases on the cadaver, and this, too, when subsequent dissection of the pelvic floor shows the levators and the fasciæ to be intact. Naturally, this demonstration is, to a certain extent, made possible by the postmortem relaxation of all tissues, but I venture the assertion, although with more diffidence, that frequently an exactly similar appearance of the posterior wall may be shown on the living subject in cases in which there exists no appreciable degree of prolapsus. I realize that the success in causing these sulci to appear in these last-named cases may be due to undemonstrable separation of the levator fascia, but I am reasonably certain that in many instances the examiner may be satisfied that this separation has not occurred.

In the Emmet operation, by means of a gutter-shaped, triangular denudation on each side of the median line of the vaginal canal, which denudation extends only through the mucous membrane, and by the introduction of three separate sets of sutures, it is claimed that "the slack of the retracted fascia is taken up throughout the pelvis, the posterior vaginal wall is lifted upward and forward in contact with the vesicovaginal septum, the everted tissues at the vaginal outlet are rolled in, and the separated levator ani muscles are brought together, so that the woman becomes apparently perfectly normal." I am candid in confessing that I am unable to accept

1. W. L. Burrage: Lacerations of the Cervix Uteri and Pelvic Floor; a Plea for Their More Careful Study, Their Diagnosis and Their Treatment. American Gynecology, August, 1902, p. 141.

these conclusions. The denudation is a superficial one, to begin with, and although the sutures undoubtedly are introduced in such a manner as will draw together the edges of the torn muscle and fascia, as the latter have not been freshened or individually united, they necessarily will remain in apposition just so long as the tightly drawn sutures remain in place, and no longer.

As I have said, in the primary operation the edges of the muscles and fasciæ are raw, and should unite when approximated by sutures. What is accomplished by nine out of ten of the secondary operations? Simply this: The mucous membrane covering a certain area is removed and sutures are introduced in such a way as to approximate the raw surfaces; in other words, a portion of the muscular wall of the vagina is freshened and backed up against itself, in which position the surfaces unite, the slack of the wall is taken up, the weakened perineal body is reinforced, and the gaping vaginal orifice is reduced to its normal size. Emmet's operation, in common with many others, accomplishes all this, but it accomplishes nothing more; the one factor that, in certain well-defined instances, recommends it above others, is that it more fully takes into consideration the direction of the tear. I do not for a moment doubt that, given a Y-shaped tear, beginning at the fourchette or in the perineum, extending to the perineal flexion, and radiating up the sulci, the method of denudation and suturing recommended by Emmet will properly approximate the superficial tissues; but I hold, and I think with reason, that no operation which does not provide for the isolation, freshening, and individual suturing of the levators and fascia will restore the woman to her former normal condition. But, as every surgeon knows, this procedure, in the great majority of cases, is impossible of accomplishment. No one appreciates more than do I the beneficial results accruing from colpoperineorrhaphy in those cases in which it is indicated; I assert only that in many of the methods of operation an exaggerated claim is made which is in no sense borne out by the pathologic conditions present.

In connection with methods of suturing, an additional factor which impresses me as being of considerable importance is this: The vaginal walls are firmly anchored to the apron-like levator below, at the orifice, and to a movable organ, the uterus, above, and are held in position by certain fibers of the levator and by its fasciæ. These muscular and fascial structures having lost their tonicity, through rupture or overstretching, and the posterior vaginal wall being deprived to a great extent of its natural support, it is reasonable to suppose that if sutures are introduced longitudinally, or in any manner except transversely, their tendency will be to draw the wall toward the fixed point, at the outlet, and so increase the traction of an already displaced womb.

It being granted that the Emmet operation does not unite the edges of the underlying muscle and fascia, I fail to determine its advantages over many of the more simple operative methods. I think it will be admitted that the operation is tedious, that the large number of sutures before being tied are in the operator's way, and that an inexperienced operator is very liable to denude too large an area, and thus unduly constrict the canal. It has been claimed that the pelvic floor is less liable to rupture during a subsequent labor if it has been repaired according to the Emmet method. My experience does not bear out this assertion.

To the question as to which of the operations of colpoperineorrhaphy is really the most efficient, it is natural that various operators will return various replies. That technic which has yielded the most satisfactory corrective results in the hands of an individual operator is apt to receive the preference. No one will deny that the proper method of closing a wound is that which takes into consideration the original line or lines of cleavage. When the accident occurs the distension of the vaginal canal is lateral, the muscles and fasciæ being drawn apart by traction exerted from the sides. Therefore, as practically every colpoperineorrhaphy, as now performed, is a superficial operation, the anatomic and pathologic conditions present lead one to suppose that a triangular denudation and side-to-side suturing will most nearly meet the indications. Personally, I believe that the Hegar operation, in which the denudation is carried well beyond the crest of the rectocele and the sutures are sweepingly inserted across the vagina, will, in the great majority of cases, prove the most satisfactory. The technic is simple, and may be carried out in less than half the time required by that of Emmet; the slack of the vaginal wall is taken up from side to side, as it should be; the weakened perineal body is strongly reinforced, and the introitus is reduced to its normal size. In all cases the denudation should extend to the mucocutaneous junction. Failure to obtain the results enumerated may be attributed to improper denudation, incorrect suturing, or to low vitality of the patient.

230 West Seventy-fourth Street.

TREATMENT OF COMPLETE UTERINE AND VAGINAL PROLAPSE.*

FREDERICK HOLME WIGGIN, M.D.
NEW YORK.

So much diversity of opinion still exists among gynecic surgeons as to the proper treatment to be employed for the cure of complete uterine and vaginal prolapse, that it seems timely to again bring this subject forward for discussion; and for this reason I desire to bring up for consideration the method of treatment which in my experience has proven the most satisfactory.

Before doing this, however, a few words in regard to the pathology of the disorder may be of interest.

The condition is best described as a reducible hernia through the pelvic floor, the sac being the inverted vagina, containing beside the uterus, tubes, ovaries, bladder and rectum, a large portion of the small intestines.

The causation of the disorder, as is well known, is primarily a separation—often submucous—of the tendons of the muscles forming the pelvic floor where they unite in the median line, and is usually due to the passage of the child's head during parturition. This separation of the tissues, which hold the rectum in its proper position, allows the lower anterior portion of the gut to bulge upward and forward into the vagina, pushing the vaginal tissues before it. This abnormal position of the bowel is increased by every act of defecation and straining at stool, and is also added to by the lifting of heavy weights. As the muscular force employed follows the line of least resistance, it tends in these cases, not to expel the bowel contents through the anus, as it should, but instead, to force the gut forward through the hernial opening into the vagina. The dif-

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ficulty experienced by the sufferer in emptying her rectum causes her to exert an ever-increasing force, and gradually and steadily, day by day, the rectocele increases in size, force in a downward direction being necessarily applied to the attached uterus, and its ligaments, which, in a normal condition, serve simply as stays holding it in place, are gradually stretched and lengthened, allowing greater freedom of position to the descending organ. As the uterus descends the bladder, of course, is dragged down by it.

The descending process is hastened, after it has fairly begun, by the added weight of the small intestines, which, being contained largely in the pelvis, find their way by gravity to the lowest point. Thus after a period of a longer or shorter duration, varying usually in accordance with the natural vigor of the patient and the amount and character of the work she is called on, by reason of her environment, to perform, a complete inversion of the vagina occurs, and a hernial sac of large size appears outside of the body, and we have the condition known as complete uterine and vaginal prolapse to deal with.

This complete form of the disease does not, as a rule, appear until rather late in life, although the patient ordinarily suffers for many years from much discomfort and disability.

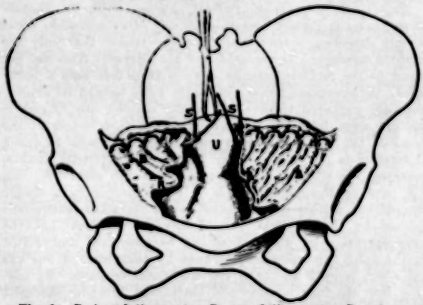

Fig. 1.—B, broad ligaments; R, round ligaments; S, sutures of kangaroo tendon; U, uterus.

Fig. 2.—B, broad ligaments; R, round ligaments; S, sutures of kangaroo tendon drawn taut; U, uterus.

In the surgical treatment of this disorder, much ingenuity has been displayed. Various operations on the anterior and posterior vaginal walls, as well as the removal of the uterus in whole or in part, has been recommended, but unfortunately, without very satisfactory permanent results.

In my opinion these disappointing results have been due to the operator's failure, in most instances, to recognize the fact that the vaginal wall in these cases is a hernial sac, with other contents than the uterus, tubes, ovaries, bladder and rectum, and that consequently the simple repair of the external perineal body, the removal of a larger or smaller portion of the vaginal walls, or even the removal of the uterus itself, will not correct the greatest cause of the difficulty, namely, the abnormal position of the small intestines.

In the elderly patients, who have come under my observation suffering from this disease, many of them having external tumors of large size, the uterus has not been found abnormally enlarged, and consequently could not be considered a factor in the causation of the trouble, and many patients have also come under observation on whom a hysterectomy for the cure of this disorder had been previously performed by other surgeons, who stated that their tumors were larger than before operation.

TECHNIC OF OPERATION.

In view of the foregoing facts, it seems clear that the operative procedures required for the successful treatment of the class of cases under consideration, are those that will first obliterate the inverted and stretched vaginal wall—which is, in reality, a hernial sac—and then restore the damaged perineal structures and distended anterior vaginal wall as nearly as possible to their normal condition. The technic which has, in my experience, best answered these requirements, has been the following:

Preliminary Treatment.—The patient, on coming under observation, is placed in bed in the recumbent posture and the tumor is reduced, gravity being employed to help retain the parts in their normal position by raising the foot of the bed about six inches. Tampons moistened with glycozone are placed in position, and the parts treated until all ulcerated portions of the vaginal walls have healed, the general condition of the patient being meanwhile carefully looked after.

Operation.—The next step in the procedure is the performance of a laparotomy after the usual preparations have been made. The patient being placed in the Trendelenburg posture before the abdomen is opened for the purpose of obtaining the aid of gravity in drawing the parts back into their normal position, the bowels are usually in these cases found to be more or less attached to the vaginal wall by adhesions which must be broken up. The uterus which, as has been previously stated, is in elderly women, usually small, is found and pulled upward by the aid of bullet forceps, drawing the vaginal wall upward also.

When this has been accomplished, a needle armed with large size kangaroo tendon is passed through the fibers of the uterus at the point of its attachment to the round ligament and carried down the broad ligament in the form of a purse-string suture (Fig. 1) and back again, the needle being finally made to emerge about at the point of entrance, so that when traction is made on the two ends of the suture the broad ligament on that side is folded up and drawn together, thus doing away with its excessive length, and giving the uterus a new point of attachment near the insertion of this ligament at the pelvic brim.

The same process is repeated on the opposite side

(Fig. 2), the abdominal cavity is then flushed with saline solution, some of which is allowed to remain, and the wound in the abdominal wall is rapidly closed by means of buried sutures and protected by a celloidin dressing.

If the patient is then in ordinarily good condition, repair of the pelvic floor and reduction in size of the anterior vaginal wall is undertaken.

In my experience there is usually no difficulty in accomplishing this, for all the operative measures necessary to make a complete cure can easily be performed in forty minutes. In these operations time is an important factor, as most of the patients are elderly and do not bear prolonged operative procedures well, or those involving much loss of blood.

Hence the importance of not removing the uterus in whole or in part when it is not at fault in the treatment of this disorder.

I have performed many such operations, as have just been described, during the last few years on women whose ages ranged from 60 to 83 years, without mortality and with most satisfactory results.

55 West Thirty-sixth Street.

DISCUSSION

ON PAPERS BY DRS. BURTENSHAW AND WIGGIN.

DR. H. O. PANTZER, Indianapolis, said that in the uteri that come for repair we have only the lateral tears to consider, because a central tear does not cause a collapse, even when it is high up. It is only the tear that goes through the levator ani muscle on either side that causes trouble, and where either one or both are involved. All the procedures recommended for the repair of these injured fibers that lie back of the rectum, simply aim to fortify the rectum. In reality, anything that will bring the lateral walls together is the proper thing to do. When the uterus comes for operation, there is more or less atrophy. The thing to do is to bring the upper ends over the rectum; therefore, it is improper, at any time, to speak of a correct or exact anatomic restoration.

DR. CHARLES P. NOBLE, Philadelphia, considers it very unfortunate that those who do secondary operations do not begin their training in an obstetric hospital, because that is the only way to learn the real nature of lacerations in the pelvic floor. Anyone who has had this experience will appreciate the basis of the Emmet operation. The primary lacerations of the perineum are lateral; the median are very rare and when they occur it means, as a rule, little or nothing. The exception is when the tear is deep enough to involve the sphincter. Any operation which considers purely the middle line of the vagina misses the chief part of the difficulty. In the beginning Dr. Noble did the Hegar operation for a number of years, then became dissatisfied because, with this operation, the rectocele is not well disposed of; he then did the Emmet operation for about ten years. This operation is far superior to the Hegar because it deals with the sulci where the lacerations are and it also takes care of the rectocele; especially in the worst cases it enables one to fasten the rectocele back in the vagina and attach the loose tissues to the levator muscle as no other operation does. He said that it is inconceivable how anyone can put sutures in the perineum that would have any effect on the uterus. If the vaginal wall is pushed into the pelvis and the suture is placed directly through the vaginal wall and into the levator ani muscle, so far from drawing the vagina out, it is fastened back within the pelvis, and when the suture runs up on the rectocele, it rolls it back and fastens it in the pelvis. The tip of the rectocele is drawn down to the caruncles in the typical Emmet operation. The defect of the operation as usually done is that we draw down between the lateral structures this central tip of mucous membrane so that there is a tendency to prevent union where it is so desirable. Some years ago Dr. Noble modified the operation by making the central denudation higher up, utilizing the principle of the Hegar operation at the outlet. This gives a much firmer introitus than the typical Emmet. It allows one to roll the rectocele back into the pelvis, fastening the vagina to the levator ani muscle; and by denuding in center a little higher up, from one-third to one-half inch within the hymen, the lateral structures at the outlet are brought directly into contact. Dr. Noble read a paper about ten years ago, in which he referred to splitting the anterior border of the levator muscle, rolling the fascia in and suturing them together. As a result of that experience he found that he made a cicatricial band in the vagina in a considerable number of cases, which was a nuisance, especially in middle-aged and elderly married women with inelastic tissues. He agrees that it is impossible, in doing a secondary operation, to restore the parts absolutely to the original anatomic condition, but one can approximate very closely. In the normal pelvic floor, just within the hymen, there is a slip given off from each levator ani which meets its fellow in the middle line, in the tendinous center of the perineum. In doing a secondary operation it is impossible to find these slips, but they can be imitated by suturing the anterior borders of the levator muscle, covered by fascia, caught deep in the sulci, and bringing them together in front of the rectum. It is very simple and, while it is not strictly anatomic, it does reproduce, as nearly as one can, the original condition. That should be a part of each perineal operation, and is an improvement on the typical Emmet operation. Its value is best proved in procidentia cases.

DR. H. W. LONGYEAR, Detroit, agreed with Dr. Burtenshaw that the Emmet operation, or any other operation which simply denudes, is inadequate, for the reason that only the mucous membrane is removed and the operator does not get down to the retracted tissues. When there has been a laceration, the muscular tissue constantly pulls toward its origin; thus the ruptured transversus perinei muscles are constantly pulling away from their insertion toward their origin at the rami of the ischii. If the sphincter ani has been ruptured, it retracts in the same manner and the characteristic dimples marking the sites of the retracted ends are seen. We can not take up these muscle ends of the sphincter by a simple denudation, neither can one take up the retracted transversus perinei by that method. Dr. Longyear considers that the only operation by which these can be uncovered and united is the split flap operation, because by that method one can get down beneath the overlying cicatricial deposits. By cutting into the torn muscles and fascia and bringing the split fibers together, a broad base of union is made, then by using the buried suture method the perineum is built up firmly. Examine carefully before beginning the incision, find the extent and direction of the tear and, after the initial incisions are made, dissect upward according to the necessity of the case or according to the directions of the tear or tears. Dr. Longyear uses kangaroo tendon moderately hardened, but catgut may be used. If the tissues are bunched in a mass suture, in many cases one gets imperfect approximation. After one has examined a few of these primary lacerations and put them together properly, he gets a comprehensive idea of the condition the parts assume when left to heal by themselves. In the split flap operation, after the cross-cut and cut on each side are made, the flap is dissected upward, on either side and underneath it, according to the depth of the tear, and the muscles are brought together by buried sutures. The Emmet clover-leaf operation is a failure because it is a superficial denudation. It does not bring the tissues together from side to side deep enough. Tait made his incision in a perfunctory way with scissors and did not dissect according to the tear. He made five cuts, no matter what the nature of the laceration. The last two incisions, forming the letter H of the U are made one on each side of the anus.

DR. A. GOLDSPOHN, Chicago, said that the primary operation, restoring a recent tear, within a few hours after labor, can be one of exact restoration of severed parts; but the secondary operation, done months or years after labor, can never be of that type. Lacerations occur laterally from the

center, usually to one side or the other, and one or the other lateral half of the levator ani, lying in the deep pelvic fascia, is injured. The attempt has been made by Dr. M. L. Harris to theoretically reunite the injured levator ani on the side where the injury occurred. That, Dr. Goldspohn thinks, is a theoretical vagary, especially if it is taken with Dr. Harris' contention that it is the levator ani muscle lying between two layers of pelvic fascia that is the only important thing to deal with, and not the fascia also. The levator ani muscle is too frail a structure to be dealt with successfully by any such end-to-end union. Such restoration of this muscle certainly is not practical and can not give good results. Further more, the isolation of the torn parts after cicatrization has occurred is so extremely difficult and imperfect that it is not a practical procedure. Dr. Goldspohn considers that the Hegar, Martin and Emmet operations have not at all dealt with the levator ani muscle or the pelvic fascia, the two structures that are the real supports of the pelvic floor. This matter was first brought out by a German about twenty years ago, who called attention to the correct anatomy of the levator ani muscle and the pelvic floor. The subject was next overhauled by Dickinson about ten years ago, and two years later Dr. Goldspohn devised a procedure of his own, a flap-splitting operation of external structures, not like the Tait, which is purely a cosmetic procedure, but inside of the pelvic cavity—intrapelvic; lifting the posterior vaginal wall, therefore infravaginal, dissecting up the posterior vaginal wall, not simply posteriorly but also laterally, until he came to the lateral descending portions of the levator ani and pelvic fascia. The work can be guided by the left index finger on both sides, holding the rectum back and searching out the levator and fascia on opposing sides and uniting these two important structures in front of the rectum with buried sutures. All the sutures in this operation that have any holding effect are buried sutures of catgut; those that are removed serve a cosmetic purpose only. The natural bridge in front of the rectum, which is composed of a union of the median portions of the two lateral parts of the levator ani muscle that descend from the pubic rami from both sides, is thus restored. After that union has been restored the vaginal wall is allowed to come down on the newly constructed bridge in a ruffled shape and is held there by being caught submucously by the buried continuous catgut suturing beneath, which reconstructs the bridge of levator ani. Then the outer skin wound or cosmetic portion of the operation is closed by interrupted silkworm-gut sutures. Dr. Goldspohn says that prolapsus uteri thoroughly developed is only exceptionally curable by the best plastic operations on the vagina and pelvic floor alone. It is usually necessary to attach the fundus uteri above, either on the anterior vaginal wall or on the anterior abdominal wall, in addition to the above mentioned plastic operation below. This fixation of the fundus, however, dare not be done unless the patients are sterile, or are made so by exsecting the tubes at the same time. Fortunately, the marked prolapse cases are usually in elderly women, who either have no more conceptive capacity or are very willing to surrender it. The best operation for anterior colporrhaphy is one suggested recently by a German, not simply denuding the mucous membrane on the anterior vaginal wall, but making a median longitudinal incision, dissecting off the epithelium on one side superficially, and undermining the vaginal wall as a flap on the opposite side, and then drawing this flap over the denuded surface of the other side, so that for a certain distance an anteroposterior strip of nearly double vaginal wall results. It is not so important how we operate on the anterior vaginal wall for cystocele as it is important that we restore a good pelvic floor for the anterior wall to rest on. Many a cystocele of not very extensive proportions will do better with the pelvic floor thoroughly restored alone than by doing ever so good a plastic operation on the anterior vaginal wall and neglecting the pelvic floor.

DR. D. H. CRAIG, Boston, said that these plastic operations constitute the highest type of surgery; they involve the highest degree of anatomic knowledge in distinguishing the normal from the abnormal. It requires more study, skill and ability to restore parts to their original condition than to merely remove diseased structures such as intra-abdominal neoplasms. If, because of lack of time, one is going to learn one operation, and only one, to do on all perinei, it is well enough to speak of this or that operation, but if one is to pose as a gynecologist, as a specialist, one must be fitted to exercise good judgment in every individual case, and no one operation will fit all cases. So one must know the Emmet, the Hegar, the flap-splitting and every other operation, and must decide which fits the case and do it. One can not succeed in bringing muscles together except by cutting down through the vaginal wall to reach them. It is true that some one particular operation is the best for some one particular case, but there are cases in which no operation ever described is suited, and we must devise one to fit that case if we wish to restore the parts to their normal condition, no matter whether or not it has ever been described before.

DR. GEORGE TUCKER HARRISON, New York City, agreed with Dr. Noble that we must know how the original lesion was produced in order to restore the parts to the normal condition. In other words, an obstetric practice is absolutely indispensable to the gynecologist. As an assistant, Dr. Harrison followed Dr. Emmet in the gradual evolution which culminated in his last operation, and thinks the profession owes Dr. Emmet a debt. No surgeon ever recognized the true mechanical principles underlying the operation for repair of the perineum more clearly than Emmet. Dr. Harrison said that whenever a man introduces a complex and complicated method, one may be sure it means retrogression. The beauty of the operation described by Dr. Tucker lies in its simplicity. His operation has regard to the original lesion, and it endeavors to restore parts to their normal condition. There may not be any tear of the skin externally, still the levator ani muscle may be torn, and then there is a rectocele. Dr. Tucker's operation brings the separated fibers of the levator ani and the fascia into true relation with each other, and that was one of the great merits of Dr. Emmet's operation. He demonstrated that it was the injury to the fascia that was the important part in this lesion, and that you must get support from the fascia. Dr. Harrison considers that Hegar's operation has no regard for the physiologic functions or relations, although he builds up a perineum. Therefore, it was a great advance when Lawson Tait, whose operation was deficient, although not original with him but with Langenbeck, devised the flap-splitting operation, showing that it was useless to take anything at all away. Dr. Tucker takes away only superficial cicatricial tissue.

DR. JOSEPH PRICE, Philadelphia, said that Dr. Noble's remarks on the necessity of an apprenticeship in maternity ought to impress everyone. It was very exceptional for us in Philadelphia to see a patient coming from Dr. Goodel's large service at the Preston Retreat, or from the Sloan Maternity, with a deep tear, favoring a large cystocele or rectocele. Dr. Price delivered 1,500 women at the Preston Retreat and never had any of those cases come to him for a secondary operation, because he never permitted the patient to have more than a few minutes to pass before a complete primary repair. There one has an opportunity of repairing an injury after mutilation as in no other part of the body. Many of these repairs are not done properly. He makes repair of the vaginal injury by putting in only one or two perineal sutures. All others are in the vagina. The old methods of putting in three or four or five sutures are errors in surgery. Labor, if simple, never shocks the patient, and repairs can be made in a few seconds with a boiled needle and any of the suture materials. There are a number of procedures that one must resort to. The simple median tears of the first or second degree rarely, in fact never, cause protrusion of the pelvic viscera or relaxation of the vaginal outlet, more than a deep central gaping. The Hegar operation, in these central tears without a rectocele, gives a good pelvic floor, when the operation is done well. The flap-splitting operation of Tait is a simple procedure; it is an external operation and easy of execution. Men have not been willing to serve long enough as apprentices, assistants or observers to be able to do the Emmet operation well. There are only four

or five men in Philadelphia who are thoroughly familiar with this operation for the restoration of the pelvic floor or diaphragm. The operation as Tait did it was a very common one, sometimes done in his hands while the patient was trying to get away from him.

DR. J. RIDDLE GOFFE, New York City, stated that in a fresh lesion one can restore the parts absolutely; in a long-standing lesion that, practically, is impossible, and when men talk about dissecting down and getting hold of muscle and fascia, bringing them out distinctly and separately and fastening them together, they are indulging largely in flights of the imagination. Coming in from either side are the transversus perinei muscles and the levator ani, which, as described by anatomists, is a very delicate structure and amounts to little. The transversus perinei are powerful and immediately retract, pulling the tear apart. In the course of time a rectocele develops, which is a falling down of the perineal floor. Dr. Goffe follows the line of the caruncles until he reaches the lowest. He denudes, then goes to the highest point of the rectocele, which he depresses with the finger, and with the knife draws a line from there down to the lowest caruncle, and then connects the caruncles from one side to the other, making a large flap. He strips the flap off in five minutes, pushes the rectocele back into the vagina and brings together the ends of the transversus perinei muscles, because in there are fascia and muscles all together. Commencing at the upper angle of the denuded surface (the high point of the rectocele) the sutures are entered on the mucous surface and passed obliquely downward under the denuded surface on one side and back in a reverse manner on the opposite side. Two or three sutures are passed in this way; when tightened they draw the rectocele up into the vagina and allow the fascia and musculature of the levator ani of either side to be brought in contact with each other in front of the rectocele, where they naturally belong. Then the ends of the perinei muscles are brought together with two sutures and tightened and the perineum is restored as satisfactorily as is possible.

DR. J. H. BURTENSHAW agreed with Dr. Craig that the operation must in every case be adapted to the pathologic condition present. No single operation is applicable to every case of laceration. Dr. Burtenshaw said that the underlying principles of repair of a wounded pelvic floor, which he had attempted to emphasize, are simply these: First, in the case of primary repair, the edges of the torn muscles and fascia are raw, and will unite if properly approximated by sutures; second, when months or years are permitted to elapse before operation, unless these muscular and fascial edges are individually freshened they will not unite, but will be held in apposition only so long as the tightly-drawn sutures remain in place. It has not been denied that practically every colpoperineorrhaphy, as performed to-day, is a superficial operation, a portion of the muscular wall of the vagina being denuded and backed up against itself, in which position the surfaces unite. He does not advocate the Hegar operation in preference to all others, but asserts only that exaggerated claims are made for the Emmet method which are not borne out by the pathologic entities present. He acknowledges that, in the presence of a Y-shaped tear, if Emmet's method provided for the isolation, freshening and suturing of the separated muscles and fascia, it would approach the ideal; but it does not do these things; it is a superficial operation like the others and, therefore, does not accomplish more than the simpler Hegar. In the closure of an abdominal wound a special effort is made to accurately approximate the several layers of tissue; and the parts are restored practically to their former normal condition. In pelvic-floor lacerations these principles are completely ignored, or at least the object is frustrated by the technic adopted, yet a similar claim of normal restoration is made, and entirely without foundation in fact.

Centenary of the Author of the Wandering Jew.—It is not generally known that Eugene Sue was a navy surgeon before he acquired fame as a novelist. He was born in 1804, and his centenary will be duly celebrated at Paris, December 10.

TYPES OF CHILDREN.

W. S. CHRISTOPHER, M.D.
CHICAGO.

(Concluded from page 1623.)

There is a condition found in new-born babies, and usually confounded with sepsis neonatorum, which seems to me to be entirely autotoxic in character. This condition is often manifested on the first day of life, but may be delayed two or three days. The symptoms are vomiting, cardiac depression, poor circulation, frequently cyanosis, irregular and weak respiration, convulsions in the severer cases, and special symptoms on the part of the bowels and skin. The stools, which are generally frequent, do not become yellow, but remain green, and contain considerable mucus. A peculiar skin eruption appears about the third day, but may be delayed for a week or even more. This eruption consists of pustules, so small that their pustular character is often overlooked. These pustules are located principally on the upper portion of the chest, the neck and chin, and in the bends of the elbows. About each pustule is a slight red areola. The pustules are never close together, and in a marked case they may not number more than 50 altogether. They very quickly dry up and scale off. Sometimes there is fever present. In one case I found temperature twelve hours after birth, in another four and one-half hours, and in a third two hours after birth, and in each case the mother was free from fever, both before and after confinement. This early appearance of elevated temperature under the circumstances can hardly be attributed to anything but an autotoxic condition. At least, we know of no infection that could produce it. In no case have I found the navel other than apparently normal. In all these cases there is deficiency of urinary secretion, and the urine itself is often dark. I have records of the urine of two of these cases, one of which recovered and the other proved fatal on the twentieth day.

Of the first case I have six analyses, which were as follows:

	Age.					
	14 Days.	17 Days.	18 Days.	23 Days.	31 Days.	38 Days.
Acid	8.0	0.5	0.8	0.4	2.0	1.1
Urea	1.55	0.1	0.15	0.017	0.1	0.025
Indican	...	0	+	+	0	0
Safranin	12	.5	2	.5	.5	0

The second child was found to have a temperature of 101.5 four and one-half hours after birth. The temperature never became normal. The child was seen in consultation with Dr. Sawyer of South Bend, Ind., a few days before its death. The urine obtained the day before its death showed acid, 7.5; urea, 1.6; ind., 0; saf., 3.

The urine of young infants is normally very pale and of very low specific gravity. In estimating the constituents the figures obtained are often so small that they seem unimportant, and when compared with the norms previously given they at first give the impression of being entirely without significance. When, however, the numerical relations of these constituents with each other is determined, a different situation is revealed. If the ratios of normal acidity to normal urea, and of normal safranin to normal urea be determined for each year of childhood and the results charted, very significant curves are found.

These ratios are given in Table 2, and the curves drawn from them are shown in Chart 3.

TABLE II.

Age.	Ratio Urea Per Cent., to Safranin Index. Males.	Females.	Ratio Urea Per Cent., to Acidity Index. Males.	Females.
0	1.81	1.11	2.69	2.59
1	0.59	0.83	2.12	2.15
2	1.06	0.94	2.07	1.93
3	0.97	1.03	1.87	1.93
4	1.02	0.96	1.92	1.75
5	0.89	0.83	1.83	1.75
6	0.85	0.75	1.76	1.67
7	0.96	0.85	1.74	1.89
8	0.84	0.73	1.51	2.49
9	0.92	0.81	1.82	2.45
10	0.83	0.72	1.71	2.45
11	0.84	0.95	1.79	1.61
12	0.79	0.92	1.51	1.63
13	0.70	1.01	1.38	1.66

The safranin-urea ration curve shows that the excretion of physiologic sugar is relatively high during the first year of life, lower during the next four years, and lower still during the next six or seven years. That the ratio should be kept high during the first years of life is not surprising, when we recall that during fetal life the liver is a glycogenic rather than a urea-forming organ. The high acidity ratio is also indicative of possible acid toxemias during the first year of life, and we know from clinical experience that such is the case. But I have shown these curves principally for the purpose of showing their application in interpreting urinary findings in infants. Patty C. was first seen when one month old; had been colicky since third day of life; much flatulence requiring many enemata; stools generally dark green, with small seed-like lumps, and thin, odor often offensive, not sour. Has had no fever. An eruption said to have appeared when one week old, which lasted three days, and which was described as consisting of miliary pustules on red background, generally distributed over the whole body, but especially marked on neck and chest. On the second, third and fourth days of life urine showed brickdust deposit, but clear and free since. Weight a little less than at birth. The child was put on a mixture of cream one part, water three parts, boiled, and the coagulated lactalbumin removed. Was also given calomel gr. 1/24, q. three hours, and one-half teaspoonful soda bicarb. daily. Colic immediately became less, and in three days the child was quite comfortable and had gained 2 ounces in weight.

It is unnecessary to follow further the ups and downs of this baby, which were mere repetitions of the previous history, with ultimate perfect recovery and gain in weight, but the urinary history of the first few days that she was under observation are interesting and instructive. The urine was entirely negative, except as to acidity and urea, which was as follows for five consecutive days:

	Age. 30 Days.	31 Days.	32 Days.	33 Days.	34 Days.
Acidity	0.6	0.7	0.4	0.4	0.3
Urea	0.00125	0.00250	0.0025	0.005	0.05
Ratio of urea to acidity	480	280	160	80	6

The actual acidity is certainly not high; lower, indeed, than the normal. But the relative acidity compared to the urea is simply tremendous. We further note that the alkali produced little or no effect on the acidity, but under its influence the urea rapidly increased. Croftan has said that the organism is so jealous of its alkalinity and guards it so carefully that when fixed alkalies are wanting it uses ammonia molecules that would otherwise be built up into urea, thus cutting down the urea formation. It looks very much as though this was the process going on in this baby. We must further notice how Nature in her effort at protection produced a profuse diuresis. While the normal ratio of acidity to urea at her age is 2.59—say 3 for the sake of round numbers—it was here on the first day of urinalysis 480, on the next 280, next day 160, next 80, and on the last day of the series 6, and with the return to approximately normal ratio, was a return to normal comfort. These tables of ratios, since I have had them, have explained to me many otherwise inexplicable urines.

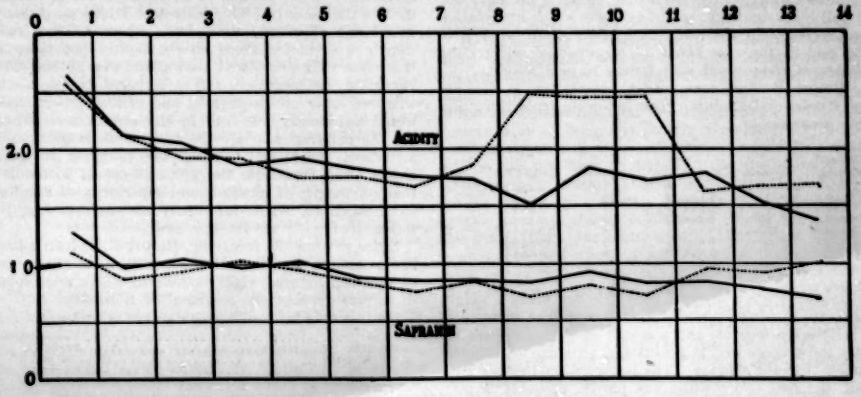

Chart 3.—Ratios of safranin and acidity to urea (urea being considered as 1.0). Solid line, boys; dotted line, girls.

Another phase of the subject involves the relation of urea excretion to body weight. I have accepted as the normal rate of daily urea excretion 500 mg. of urea per kg. of body weight, or one two-thousandths of the body weight. Some children persistently excrete an excess of urea. This may be due to two causes—either excess of ingestion of nitrogenous food by children whose urea excretion would otherwise be normal, or to excessive disassimilation. This latter condition is, of course, found in fevers, but I here refer to children free from fever, and who would lose weight rapidly if they did not make up for the loss of nitrogen by heavy eating.

Children of this latter class are generally underweight and gain very slowly. They must be carefully distinguished from children who are under weight and size, because of hereditary tendency to smallness, and from children who from deficient appetite fail to take sufficient food. The particular class to which I refer I commonly call the greyhound type because no amount of food can make them stout.

In estimating the significance of various physical measurements, I have found very convenient the tables of norms worked out by the corps of the Child Study Department of the Chicago Public Schools under my direction as chairman of the department. These norms are based on the measurements of 6,259 pupils of the Chicago schools, selected as to neighborhoods, so as to secure data from children in fairly comfortable walks of life. When measuring each child its birthday was recorded so that its age in years, months and days could be computed. From these data norms were computed to the even years and half years of school life, with the average monthly variations. When I measure a child I put down at the head of the column its exact age, and after each measurement, the age in years and months for which the particular figure is normal; this I call his weight-age, height-age, etc. This explanation is necessary for the ready understanding of what is to be said of the case about to be reported, illustrating excessive urea output with failure to gain weight.

Robert B. first came under observation at the age of 7 years and 12 days. The following table illustrates his progress:

Age in Yrs. and Months.	Increase.	Weight-Age.	Increase.	Height-Age.	Inc.
7 and 0	..	5 and 0	..	7 and 9	..
7 and 2	2	6 and 4	16	8 and 1	4
7 and 6	4	6 and 11	7	8 and 7	6
8 and 3	9	7 and 7	8	9 and 1	6
9 and 3	12	8 and 1	6	10 and 0	11
9 and 9	6	8 and 4	3	10 and 3	3
10 and 1	4	8 and 8	4	10 and 7	4
	37		44		34

In thirty-seven months' time this boy made a weight increase of forty-four months and a stature increase of thirty-seven months, and was still seventeen months below the average weight for his age, although six months' taller than the average. The large weight increase during the first two months was partly, probably largely, due to the fact that when the first weight was taken he was just recovering from a rather severe illness. If this be thrown out, there remains only an increase of twenty-eight months' weight in thirty-five months' time, notwithstanding the efforts which were being made to increase his weight. That these efforts were of some value is shown by the fact that during a certain twelve months he made his slowest increase in weight, and during this particular time he was not under observation. During the periods he was under observation, he was seen many times, and his weight was very variable, but showed a slow general increase. During this time I made 31 analyses of twenty-four-hour collections of urine. In 3 only of these analyses was the urea output below normal, i. e., less than 500 mg. per kg. of net body weight. The lowest output found was 350. Twenty-eight times the urea output was above normal, the greatest being 1,032 mg. per kg., and the average urea excretion for all the 31 examinations was 707 mg. per kg. In each case the net body weight was determined by subtracting from the weight with ordinary indoor clothing 5½ per cent. of that weight, which gives remarkably accurate results. The other peculiarities of this boy, which are also characteristic of the class he is intended to typify, are rapid pulse, quick perception, high grade of intellect generally, ready response to all kinds of stimuli, a nature extremely sensitive to rebuke, pupils often dilated. In this boy the thyroid isthmus is large, which is not always found in children who belong to the same class. Two younger sisters of this boy have clinical histories practically identical with his. As to his heredity, his mother was slender as a child, although not so now, and has very large eyes, but no prominence of the eyeballs. His father, a successful business man, is described as small, active and nervous. On both sides of the family there has been some mental trouble. The family is Jewish, and in my experience there are more such children among the Jews than among Gentiles.

I am inclined to correlate with this type of children, those infants who without gastroenteric or other local or infectious disease of any kind, persistently fail to gain weight, so that at nine or ten months of age they may weigh only nine or ten pounds. After a certain time these infants generally suddenly change and rapidly become of normal weight, and so also do older children of this type, and in adult life it is not uncommon to find obesity. This statement I base on personal knowledge of several individuals whom I knew sufficiently well in childhood to confidently put them in this class. The two well-known pictures of Napoleon Bonaparte as lieutenant and as emperor, together with what we know of his physical and mental peculiarities, would apparently put him in the same class. These are the children who are the little frail, bright pupils at school, frequently among the youngest in their classes, who constitute the great exception to the law that superiority of physique and superiority of mind go hand in hand, while inferiority of physique and inferiority of mind are likewise associated.

Since writing the foregoing, Robert R. and his sisters again came to the office, May 12, 1904, after an absence of nineteen months, eight months of which were spent in various parts of the continent of Europe.

On this date his measurements were as follows:

Age	11-7-25
Weight	29.650 kg.
Weight-age	10 and 5
Height	1,409 mm.
Height-age	12 and 3
Height, sitting	732 mm.
Height, sitting-age	11 and 0
Urea factor	628

When the Chicago school measurements were made, the cards representing the several individuals were separated into sexes and years. Then for each measurement for each year and sex, the cards were arranged in order, from the greatest to the least. They were then divided into ten equal groups, and the measurements at the beginning of each group recorded. These tables enable us to determine the percentile group into which any measurement of any child will fall. Applying these percentile tables to Robert R., taking his measurements of June 27, 1902, and May 12, 1904, for comparison, the following is found:

	June 27, 1902.	May 12, 1904.
Age	9-9-10	11-7-25
Weight (percentile group)	20—	20+
Height (percentile group)	70+	70+
Height, sitting (Do)	40+	40—

This shows that he still belongs to the same type that he did two years ago.

His sister Helen who, while she formerly presented the features of the same metabolic type as Robert, never presented those features in as marked a form, has now entirely departed from the type. Figures for her, cor-

responding to the above table relating to Robert, are as follows:

	June 27, 1902.	May 12, 1904.
Age	6-4-6	8-2-21
Weight (percentile group)	30	60+
Height (percentile group)	30	30+
Height, sitting (percentile group)	20	20—

Her urea output was 424 mg. per kg. These figures take her entirely out of the class to which she formerly belonged, and her general appearance fully supports this view. In the third child of the family the type persists.

What is the reason for the existence of this type? These children certainly seem to be individuals with excessive thyroid activity. So far as their peculiarities go, they are those of Graves' disease of later life. Many of their symptoms are produced by the administration of desiccated thyroid. For me such children represent the puerile form of Graves' disease, from the accepted form of which they differ only in degree.

Whether from the children in whose urine the physiologic sugar runs high, as shown by a high average safranin index, the diabetics of later life are recruited, it is as yet impossible to say.

How are the children with high acidity to be classified? As shown in Table 1, high safranin is generally associated with high acidity. Also in diabetes certain acid toxemias are among the gravest manifestations. On the other hand, high acidity is found more commonly than either of the other abnormalities here considered, and also is found to exist without either of the others and independently of indicanuria. Hence high acidity of urine, while undoubtedly of complex origin, is most commonly found in conditions which do not even remotely suggest either diabetes or hyperthyroidation. This independent cause I shall tentatively speak of as gout, because it is usually accompanied by symptoms which we are prone to associate with gout. Urines which contain excess of urates are highly acid. Some urines with excess acidity seem not to be toxic.

This deduction seems justifiable. In children three diathetic states are determinable by urinary findings and anthropometric observations which correspond to three great metabolic diseases of adult life, viz., gout, diabetes and Graves' disease. Is Addison's disease, the fourth great metabolic disease of adult life, represented in childhood? I do not know, but I have suspected it when watching those rare and fatal hemorrhages of the newly born. In one of these hemorrhagic babies I found a toxic urine, and treatment directed to this condition for a time seemed to stay the disease, but ultimately death ensued.

In considering these diathetic conditions, it must be borne in mind that they are all manifestations of peculiar metabolism and that the resulting symptoms are explicable as evidences of autotoxemias. The mechanism of autotoxemia may be considered as follows:

1. The toxins may act directly on the nervous system, producing symptoms referable to it.

2. The effort to rid the body of the offending agents leads to efforts at vicarious elimination with frequent production of pathologic states in the vicarious eliminating organs.

3. In a secondary way the toxins produce disturbance of general nutrition.

The following effort at a partial classification of the symptoms found in these autotoxemias may be found useful:

CENTRAL NERVOUS SYSTEM.

Sensory.
Pain
Various neuralgias
Headache
Paresthesia
Disturbed sleep
Motor.
Convulsions
Epilepsy
Vomiting
Asthma
Somnambulism
Psychic.
Bad temper

VICARIOUS ELIMINATING ORGANS.

Vaginal catarrh
Vulvar catarrh
Balanitis
Mucosae (Catarrhs).
Gastrocenteric tract—
Stomatitis
Mucous diarrhea
Serous diarrhea
Gastric catarrh
Appendicitis (?)
Respiratory tract—
Nasal catarrh
Bronchial catarrh
Tonsillar involvement
Genital tract—
Eyes—
Conjunctival catarrh
Phlyctenular keratitis
Skin.
Eczemata
Erythemata
Furunculosis

GENERAL NUTRITION.

Weight anomalies. Excessive weight. Deficient weight.

It might be well to make this distinction between diathesis and autotoxemia as here used. Autotoxemia is due to the occurrence of poisons produced in the body in sufficient quantity to cause symptoms. Diathesis is the type of metabolism which produces the autotoxemia. In other words, the autotoxemias are the principal ways in which the diatheses manifest themselves.

In considering the management of the diatheses and their autotoxemias, the autotoxemias demand first attention. The efforts are to be directed toward neutralization and elimination of the poisons. In the acid toxemias the alkalies hold the first place as therapeutic agents, and of these the potash salts have proven the most serviceable in my hands, with the soda salts next. Lithia has not been so useful. The quantities given must be large enough to reduce the urinary acidity to normal and keep it there. Mercury is extremely serviceable, and so also is colchicum. When the alkalies are given freely over a long time, and the tongue becomes coated, hydrochloric acid may be given with them; it does not increase the acidity of the urine under these circumstances. The high degree of physiologic sugar in the urine which is so commonly found with high acidity is efficaciously managed on the same lines. I do not know of any specific drug treatment for it.

The thyroid type of trouble, though less common in occurrence than either of the other two, is more constant in its manifestations. The drugs which have been most serviceable to me in its management have been arsenic, in the shape of sodium cacodylate, which is well borne in large doses, desiccated thymus (not thyroid, the use of which in such conditions has always seemed to me most illogical) and opium. In treating any of these autotoxemias, it must not be forgotten that the toxins absorbed from putrefying bowel contents often assist in producing the symptoms, and must be taken care of in ways which are well understood.

Dietetic management is directed principally to the diatheses themselves, for they certainly may be influenced to some extent by diet.

In infants, in whom the acid diathesis is very common, diet is the best means at our disposal in its management. Some of these acid babies do fairly well on the breast, but when the condition is very marked it is a proper cause for weaning. Fresh milk is badly borne by these babies, and fresh cow's milk is decidedly worse than breast milk. Cooked milk, however, is very useful. Sometimes sterilizing the milk is sufficient to fit it to these babies; in other cases the milk must be actually boiled and the coagulated lactalbumin

removed. With others it is necessary to resort to milk so thoroughly cooked as condensed milk, and even in some instances to use the dried milks. Condensed milk is generally the best, and condensed milk has a large field of usefulness with babies with acid diathesis, and that means with a large number of babies. I am, of course, perfectly familiar with the fact that condensed milk is accused of being a most powerful agent in the production of rickets and scurvy, and I have been loth to follow its use. I am not advising the indiscriminate use of condensed milk, but I am testifying to its utility for babies who have the acid diathesis. It is to some extent serviceable with thyroid babies. Any one who watches his bottle-fed babies and to those who are on condensed milk gives orange juice and cod-liver oil, need not worry about scurvy and rickets. I have fed many babies on condensed milk, but I have watched them carefully, as I do all bottle babies, and I have yet to see a case of scurvy develop in them, and no more rickets than occurs in other forms of feeding.

I have described several cases to illustrate certain points, and shall here give another to illustrate the point just made. This case is by no means unique in my experience, but it has always been a type case with me, perhaps because it occurred rather soon after my conversion to the utility of condensed milk:

Willie S. was on the breast for three weeks and one week on a milk and barley mixture, and then on Walker-Gordon modified milk, which was doubtless prepared secundum artem, as the formulas were prescribed by the laboratory people themselves. He was always a vomiting baby and had had colic from three months to four and one-half months. His weight at birth was 8½ pounds. He was brought to me Nov. 17, 1898, at the age of 5 months. He then weighed net 10 pounds 2 ounces. He was immediately put on condensed milk. At the end of a week the vomiting was reported as much less, sleep good, and he had gained five ounces in weight. In three weeks he had gained one and one-half pounds and the vomiting had practically ceased. At 10 months of age his weight was 20 pounds net and he had three teeth. There was some beading of the ribs, but this was noted as present when first examined, and he had had cod liver oil most of the time. At 13 months he weighed 23 pounds 3 ounces net and had seven teeth. He was kept on condensed milk until he was about 20 months old. The original rickets made no headway and there never was any scurvy. He was last seen April 24, 1901, then nearly 5 years old, while on a visit to Chicago. He was then a fine, healthy boy, weight 40 pounds 7 ounces, and stature 1,045 mm. net. What modifications were made in his food by the laboratory people I do not know; they certainly, however, did not control the vomiting, while they succeeded in producing marked deficiency in weight and great malnutrition. It is doubtful if this boy would have survived if he had been kept on his fresh milk. The trouble lay in the lactalbumin, and when this was rendered indigestible and hence unabsorbable by the process of condensing, the baby's difficulties ceased.

Fresh milk is poisonous to quite a number of babies. I remember a baby—its type I can not tell you, as it was before the days when I began to differentiate babies into types—that was very badly nourished on Nestle's food. I recommended fresh milk. The mother demurred, saying that fresh milk always made the baby sick. I was not convinced, believing then that any baby could take fresh milk, and after cleaning out the intestinal tract put the child on a fresh-milk mixture that would with a normal child have been satisfactory, but with this child, however, it produced serious vomiting and diarrhea in a few hours. After a short time on arrow root, it was again put back on the fresh milk with the same result. I then put it back on the Nestle's food to get time to think. After matters straightened out on the Nestle's food, I tried the baby on equal parts of prepared Nestle's and the fresh-milk mixture. Again disaster. Then I put a single teaspoonful of fresh milk in the Nestle's food. This was borne, and slowly the fresh milk was increased, one teaspoonful at a time. It bore well six teaspoonfuls in each feeding, but when seven teaspoonfuls were used vomiting and diarrhea followed. The variation between six and seven teaspoonfuls was tried a number of times until both the mother and I were convinced that while the baby could stand the six teaspoonfuls it could not stand seven. I am quite sure that if prior to this experience any one had told me that any baby's stomach could make such a differentiation, I should have denied it. Some years ago a baby came under my care at the age of three months, covered with an ugly eruption, partly ecsematous and partly furuncular. It was in constant pain and very badly nourished. This baby seemed to me to be of the thyroid type, and I put it on beef juice exclusively. In about a week the eruption cleared up and the pain ceased. Later arrow root was added to its diet, and some two months later it was able to take some milk with its arrow root and beef juice. Throughout the life of the thyroid child the beef proteids seem better borne than the milk proteids.

Why do children show diatheses? At birth the child is a very incomplete human being. Its anatomic deficiencies are obvious. Its physiologic or chemical deficiencies are less obvious but more important. Attention is often called to the crisis through which the child passes at birth when its heart changes from a three-chambered to a four-chambered organ. Yet this is trifling compared to the crisis which occurs when the first food enters the stomach, and that organ suddenly assumes entirely new functions; when the products of digestion reach the liver and that organ commences a series of heretofore untried chemical processes; when the products from this new organ, instead of those from the old, practiced and well-developed liver of the mother, start on their way through the circulation to do good or to do harm. It would be absurd to suppose that the physiologic processes of the new-born baby are completely developed when the anatomic elements are so markedly deficient. We know positively that these processes are not the same as those of the adult, otherwise the infant could utilize the same food as the adult. It is because of this physiologic incompleteness that autotoxemias occur, and this also explains the greater frequency of autotoxemias in childhood than in adult life, and their still greater frequency in infancy.

It may have been noticed that in describing the acid and saccharin diatheses, I described them together, not making a sharp line of distinction between them. This is in accordance with the facts as I have observed them. All these diathetic conditions constantly intermingle with each other, and at times one or another seems to exist alone, to be in its turn supplanted by another. Of them the acid or gouty toxemia is by far the commonest; next in frequency come the saccharin or diabetic manifestations, and least frequent of all is the thyroid type. As age increases and organs develop, one diathesis after another normally disappears. How fine it would be if we should hereafter find out that the great metabolic diseases of later life—gout, diabetes, Graves' and Addison's diseases—are but the exaggerated outgrowth of conditions found normally enough in early infancy. It would be the chemical analogue of Cohnheim's theory of the origin of new growths.

Clinical Report.

DISLOCATION OF THE CARTILAGE OF THE NOSE.

IRVING McNEIL, M.D.,
MESCALERO, N. M.

The following unusual case seems of sufficient interest to deserve publication:

Patient.—Mrs. W., Mexican, 30 years of age, came to me Aug. 1, 1904, complaining of a "sore nose."

History.—About a year before she accidentally struck her nose violently against a door. There was no hemorrhage, nor even broken skin, but the blow was a severe one, and her nose had troubled her ever since, hurting severely one week, and appearing to get almost well another.

Examination.—Inspection showed nothing abnormal except a little redness and swelling about the lower left ala. On palpating the nose lightly with my finger there was a most peculiar sensation of something slipping or giving way beneath. This also caused some pain.

I diagnosed dislocation of the left lower lateral cartilage of the nose. Ordinarily there was no displacement because the elasticity of the surrounding tissues held it in place. Yet it had not been allowed to remain in place long enough for complete repair to be effected; being moved about in the act of blowing the nose.

Treatment.—The indication—fixation—was clear, but how to accomplish it satisfactorily was a problem. Adhesive plaster could not be applied so as to give sufficient firmness; and an ordinary plaster mold could not be fastened on without binding up the patient's whole head. I adopted the following method, which proved successful: After protecting the surrounding parts and covering the nose with a very thin coating of vaselin, I applied over the entire projecting part of the organ a coat of flexible collodion. Quickly, before this could harden, I sprinkled in plaster of paris. Then, waiting a moment for it to "set," I applied in a similar manner another layer of collodion and another layer of plaster, and so on until there was a mold over the nose one-eighth of an inch thick. When finished, this was nearly as hard as an ordinary plaster mold, and held on securely by the adhesion of the collodion.

Result.—As the patient lived some miles away, I did not see her again, but several weeks later her husband told me that the cast had come off of itself within two weeks, that there had been no recurrence of the trouble since, and that his wife's nose seemed to be perfectly well.

New Instrument.

A RECTAL VALVE CLIP WITH APPLICATOR.

WELLS TEACHNOR, M.D.
COLUMBUS, OHIO.

Since the operation of valvotomy has been established as a means of relief from obstinate constipation or obstipation, the tendency has been to simplify the armamentarium and the operative procedure.

I have devised an instrument in the form of a clip, which painlessly divides the muscular fibers contained in the rectal valve in from three to five days without fear of hemorrhage or peritonitis. Figure 1 represents the applicator with clip in its grasp, opened, ready for application to the hypertrophied valve. The clips are made in three sizes, short, medium and long. Each consists of two fenestrated elliptical jaws controlled by a set-screw (Fig. 2). The apposing surfaces have a slightly elevated serration in their center running from the base of one side around the tip to the opposite side. This represents the cutting surface. On the outer side of the serration is a narrow, smooth surface that makes enough gradual pressure to produce sufficient inflammatory exudation to seal the blood vessels and lymphatics. This prevents hemorrhage and infection. At the base of the apposing surfaces a slight elevation is made so that when the screw is driven home the pressure will be the same at the tip as at the base. At the base of each jaw, directly opposite the center of the screw, is a slight oval depression to receive the end of the

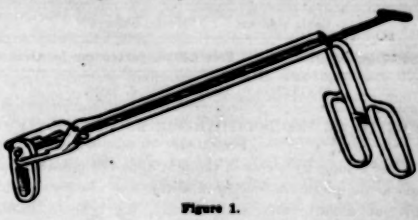

Figure 1.

applicator. The applicator consists of two forcep handles and blades nine inches long, armed with a lock. Running parallel with and between the blades is a screwdriver which fits in the head of the screw when the base is properly grasped. It has play back and forth of about half an inch, to accommodate the inner jaw of the clip when adjusted for application (Fig. 3). The advantages claimed for this instrument are as follows:

Figure 2.

First, the clip presents a perfectly smooth surface and will not irritate the surrounding gut wall nor become entangled with the fecal matter.

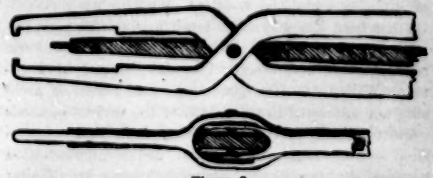

Figure 3.

Second, the pressure can be regulated by the set-screw.

Third, the simplicity and ease with which the applicator is released when the clip is firmly adjusted on the valve.

Fourth, it places the operation in the hands of any competent physician or surgeon.

187 East State Street.

Psoriasis.—Pouffé concludes from a study of the subject that psoriasis is due to a slow chronic intoxication from defect of the internal secretion of the ovary or testicle, thus failing to neutralize cellular poisons formed in the system by failure to oxidize substances due to vitiated nutrition. The disordered cell function in arthritism, instead of a zymase, diastase or ferment needed in the general nutrition, produces a pathogenic secretion especially acting in the local manifestation of psoriasis. This indicates a serious trouble of cellular nutrition requiring a general internal medication to neutralize the toxin and favor its elimination.

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ARE THERE PSEUDODIPHTHERIA BACILLI VIRULENT FOR MAN?

For a long time it was thought that the clinical and anatomic picture of typhoid fever was always caused by one definite organism, namely, the typhoid bacillus. But when systematic bacteriologic examinations of the blood came to be made during the life of patients suffering with infections diagnosed clinically as typhoid fever, it was soon learned that a small percentage of these patients were suffering not from typhoid fever in a strict etiologic sense but from infections with bacilli closely related to, yet different from, the typhoid bacillus and thus the existence of paratyphoid fever was established. Later careful clinical and anatomic studies have shown that paratyphoid fever may differ considerably from typhoid fever in its clinical course as well as in the nature of the anatomic changes it produces. This differentiation in so thoroughly studied a disease as typhoid fever may be held up as a lesson indicative of similar possibilities in other equally well-trodden fields when submitted to careful and critical, open-eyed investigation.

The question of the relationship between the bacillus of diphtheria and the so-called pseudodiphtheria bacillus has been the subject of much and constant controversy ever since 1887, when the "pseudodiphtheria bacillus" was first described by Loeffler and by Hoffmann-Wellenhof. The general medical reader is probably not interested in the details of the various methods —cultural and morphologic—that have been emphasized as important, even essential, in the differentiation between diphtheria and pseudodiphtheria bacilli, but only to be abandoned because unreliable and inadequate for the purpose. Even the belief that the so-called pseudodiphtheria bacilli were non-virulent to animals has had to give way to the results of recent experiments. It is true that the bacilli of the pseudo group appear to have only moderate degrees of virulence, but it must be remembered that members of the diphtheria group proper may manifest the most varying degrees of virulence for animals. If we grant that bacilli, resembling each other so closely as to be with great difficulty, if at all, distinguishable by means of morphologic and cultural characteristics, are virulent, then the question arises, what is the nature of this virulence? If the pathogenic effects are promptly neutralized by means of diphtheria serum, then the problems involved would be greatly simplified, inasmuch as we would appear to be dealing with a group of organisms which, though distinct in many respects, yet are identical in the most important feature from the standpoint of practical medicine, namely, the nature of their pathogenic action. But, unfortunately as it would seem, the recent work of Spronek, E. H. Ruediger, and Alice Hamilton shows that by the method just now suggested it has been found that there exist virulent pseudodiphtheria bacilli the pathogenic effects of which can not be neutralized with diphtheria antitoxin. Indeed, the mode of pathogenic action of the pseudobacilli appears to be radically different from that of the diphtheria bacillus which is a typical toxicogenic germ, the infection remaining local while the toxins are absorbed, whereas the pseudobacilli cause a general invasion of the blood. And Alice Hamilton,[1] in a careful study of a variety of pseudodiphtheria bacilli, isolated principally from the throats of scarlet fever, measles and diphtheria patients, shows that the loosely constituted group of pseudodiphtheria bacilli contains organisms that differ fundamentally because a serum produced by immunization with one member of the group protects against some but not against all other members of this same group. Hence the term pseudodiphtheria has in the past been applied not only to organisms that are diametrically different from the diphtheria bacillus, but also differ radically among themselves.

Naturally the next question that suggests itself will be: Does this group contain organisms virulent for man, and if so what is the character of the clinical picture? This question can not be answered dogmatically as yet. The facts and observations necessary therefor are now being gathered. Yet the following instance from Hamilton's article can not but be suggestive and instructive:

"No. 11 was isolated from the throat of a child who, without appearing very ill, had swollen tonsils covered with a delicate, veil-like exudate. Smears from the throat showed typical diphtheria bacilli, and 2,000 units of antitoxin were administered. At this time the child was playing about the room, but soon after the injection of antitoxin his temperature rose, he became markedly worse, and died in less than twenty-four hours. Pure cultures from the throat on Loeffler's serum showed short and long, straight and curved, rods with Neisser granules, which, however, were of narrower diameter than the rods. On all culture media the growth resembled that of a diphtheria bacillus. Less than 1 per cent. of the body weight of a broth culture killed guinea-pigs in twenty-four to forty-eight hours, producing a general bacteriemia and no change in the adrenals. Diphtheria antitoxin exerted no protective influence; indeed, the animals injected with it died somewhat earlier than those without (six to eight hours). On the other hand, the Ruediger serum [a serum produced by immunization with a virulent pseudobacillus] did protect, so that we have here again a virulent pseudodiphtheria bacillus . . . ."

1. The Journal of Infectious Diseases, 1904, vol. vi, pp. 690-713.

Cases like this teach the lesson that every instance of apparent failure of diphtheria antitoxin, whenever possible, should be subjected to rigid bacteriologic study with diversified animal experiments. Such cases should not be explained off-hand as due to mixed pyogenic streptococcal infection; this may explain many such cases, but in all probability it can not account for all. It is self-evident that if it should prove true that the general clinical picture of diphtheria may be caused by bacilli other than the true diphtheria bacilli, and consequently not prove amenable to diphtheria antitoxic serum, then this of course would not in any way reflect on the efficacy of this serum, which in the nature of things can not be expected to have any curative effect on infections of a radically different nature than the one we are wont to call true diphtheria. A rapid means of diagnosis would be demanded, as well as proper specific means of treatment, for the "new disease."

In view of the natural tendency of many minds to resent all disturbances in conditions long regarded as well established, let us take to heart once more the great truth contained in these words of Huxley: "Sit down before fact as a little child, be prepared to give up every preconceived notion, follow humbly wherever and to whatever abysses nature leads, or you shall learn nothing."

THE YOUNG PHYSICIAN AND MEDICAL DISCOVERY.

An old Greek philosopher said that if a man had not accomplished something worth while before he was forty, there was not much use looking for anything novel and original from him. In more modern times it has been said that unless a man has written a successful book during his first two-score of years he is not likely to do so afterward. In general, there is the feeling that if a man has not proved himself possessed of a talent for investigation before early middle age is passed, he may succeed in doing conventional things reasonably well and may make a commonplace success in life, but he will scarcely accomplish anything that will really enlarge the scope of knowledge. As a matter of fact, while old men have made many great discoveries, it is mainly to young men that the world owes those steps across the boundary of the unknown which constitute landmarks in the development of knowledge.

There is a very interesting exemplification of the truth of this principle in the history of medicine. Most of the important discoveries have been made by comparatively young men. Morgagni, for instance, began the famous set of "Adversaria," or note-books, in which he set down the details of the clinical history of the patient side by side with the autopsy findings, when he was as yet only a medical student not out of his teens. This seems a simple and ordinary thing to do now, but it was the beginning of the modern science of pathology. It is because he carried out in after-life the work thus begun that Virchow referred to him at the International Congress at Rome some ten years ago as the father of modern pathology. Virchow himself, it may be said in passing, was only about twenty-five when he began his series of noteworthy observations in pathology, and before he was thirty-five the whole idea of his cellular pathology had taken form in his mind.

Auenbrugger, to whom we owe the beginnings of modern physical diagnosis and the demonstration of the value of percussion as a means of recognizing and differentiating conditions within the thorax, got his genial idea before he was thirty, and worked it out during the years between thirty and forty. Laennec, the discoverer of auscultation, who so amply complemented Auenbrugger's work in physical diagnosis, began the regular observations on which his method of diagnosis was founded in his early twenties. He continued his studies of the subject faithfully for twelve years before he published his famous book, which appeared before he was thirty-five. That book is probably the greatest marvel in medical literature of exact and absolutely accurate observation combined with careful determination of the etiology of symptoms observed.

About the time that Laennec was doing his work in Paris, Corrigan, at the age of twenty-five, began making observations on aortic disease in Dublin. He completed and published his observations[1] in 1832. His essay of scarcely ten pages establishes definitely for all time the knowledge of aortic insufficiency, or, as it was then called, permanent patency of the mouth of the aorta. Trousseau, the greatest of living clinicians of the time, suggested that aortic disease should henceforth be called Corrigan's disease, so completely did the young Irishman settle all the disputed points with regard to it. When he published his essay he was only twenty-nine years of age, and the hospital in which his observations were made had only six beds for medical patients. Corrigan was evidently a man who studied cases faithfully and did not merely go through wards seeing patients.

Stokes, who was Corrigan's contemporary in Dublin, published his first book on the use of the stethoscope when he was twenty-one. The instrument was almost unknown out of France at the time, and Stokes' little book did more to advance the cause of physical diagnosis in the English-speaking countries than any other contribution to medical literature. Before he was thirty, he had described the form of breathing now referred to as Cheyne-Stokes respiration. His friend, Graves, whose notable first description of exophthalmic goiter ought to prevent its being called Basedow's disease, did his best work also before he was thirty-five. Richard Bright had worked out nearly all we know, even down to the present time, of kidney disease, when he had reached the same age.

1. Edinburgh Med. and Surg. Journal, vol. xxxvii, p. 225.

The one thing that it seems worth while, then, to emphasize for the sake of progress in medicine, is that young men can not too soon begin to do something more than routine work; that they should not allow themselves to be burdened all too much with the complex technic of their generation, but should be encouraged to grasp the opportunity to see things for themselves, and not entirely nor always through the spectacles of the past, or of others.

ALBUMINURIA.

Nothing is simpler in the routine work of the clinician than the detection of albumin in the urine when it is present in considerable quantities. Every physician, however, sees cases in which only traces of albumin are present or in which the reactions obtained are atypical; it is then that he often hesitates to trust his own results, and prefers to send the specimen to an expert physiologic chemist for a definite opinion. So many different tests have from time to time been recommended for the detection of minute traces of albumin, and so many warnings regarding fallacies have been made, that it is but little wonder that the physician who lacks time to follow the advances in analytical chemistry should sometimes become confused. It would be helpful if some chemist in whom the profession has confidence would at intervals "take stock," so to speak, of the various practically important urinary tests, sift out the less essential reactions and present to practitioners, as the result of the application of his critical judgment, a few simple and reliable methods of procedure.

Out of the host of tests for albumin in the urine, a satisfactory selection for the average practitioner might, we think, be made somewhat as follows: In the first place, a very delicate test might be applied, like that of Spiegler as modified by Jolles, which, when applied as a ring test, will demonstrate the presence of as little albumin as 0.002 gram in a liter. If with this very sharp test a negative result is obtained, the urine may at once be pronounced absolutely free from albumin; if a positive result be yielded, confirmatory tests should be made with less delicate reagents—the heat and nitric-acid test, Heller's test, and the test with ferrocyanid of potassium and acetic acid. If all are positive the presence of albumin in pathologic quantity may be safely diagnosed.

Albumin being present, it is desirable to determine if it be serum-albumin or globulin, or both. For clinical purposes the presence or absence of globulin can be ascertained by simply diluting the urine, making sure that it is acid in reaction. Globulin is soluble in salt solutions of the concentration of ordinary urine, but is insoluble in very dilute salt solutions; it falls out as a flocculent precipitate if the urine be well diluted with distilled water. Thus, if 50 c.c. of filtered urine be diluted with 500 c.c. of distilled water, and one or two drops of dilute acetic acid be added, the urine will remain clear if globulin be absent, but will show flocculi if it be present.

Whether albumin be present or absent, the urine should next be tested for the presence or absence of albumoses. In ordinary practice, as safe a method as any recommended for the purpose is to add five drops of dilute acetic acid and 2 c.c. saturated solution of common salt to 10 c.c. urine; boil and filter while hot; if the filtrate on cooling becomes turbid, albumoses are almost certainly present.

The delicate reagent of Spiegler, as modified by Jolles and recommended above, is not nearly so well known as it should be. The test fluid consists of 10 grams corrosive sublimate, 20 grams succinic acid, 20 grams sodium chlorid and 500 c.c. distilled water. To 5 c.c. filtered urine is added 1 c.c. dilute acetic acid, and this mixture is, by means of a pipette, gently and gradually passed down the side of an obliquely held test-tube containing 4 or 5 c.c. of Spiegler's reagent, so that the acidified urine forms a layer on the surface of the reagent without mixing with it; if albumin be present, a sharp white ring appears immediately, and the precipitate will not disappear on warming.

There has been much demand among physicians for a safe and practical test for albumin in the urine, applicable at the bedside, or, at any rate, at the patient's home. For this purpose there is nothing better than the sulfosalicylic-acid reaction; the physician may carry in his pocket or medical case a small phial of dry crystals of this acid. To apply the test one simply drops a few crystals of the acid into a little fresh acid urine and shakes; if albumin be present, a precipitate will be formed or the urine will become turbid; even if only a trace exists, the urine will gradually become opalescent. This reaction, though very simple, is delicate enough; if the test yield a negative result the urine may be assumed to be free from albumin; if a positive result be obtained, the urine contains albumin, and a specimen should be taken to the physician's office laboratory and examined according to the outline given above.

THE RELATIONS BETWEEN PULMONARY TUBERCULOSIS AND VALVULAR DISEASE OF THE HEART.

It was long maintained that an antagonism exists between valvular disease of the heart and pulmonary tuberculosis by reason of the increased amount of blood present in the lungs as a result of stasis, although the view did not remain undisputed. As a matter of fact, however, the coincidence of the two conditions, while it does occur, is not altogether common. It has also been contended that pulmonary tuberculosis develops especially in individuals with small hearts, cardiac enlargement when present being attributed to complicating conditions.

With the view of studying the frequency and relationship of tuberculous lesions of the lungs, pleura,

pericardium, heart and great vessels, Dr. George W. Norris[1] analyzed 7,040 postmortem records in three Philadelphia hospitals. Among this number there were 1,764 cases of tuberculosis of various kinds. Tuberculosis of the lungs was found so frequently in association with valvular disease of the heart that the conclusion could not be avoided that the latter exerts little or no influence on the former, either inhibitory or curative, even if satisfactory compensation is maintained. Mitral stenosis seemed to be not less often coincident with tuberculous disease of the lungs than other varieties of heart lesion. It appeared doubtful whether smallness of the heart predisposes to pulmonary tuberculosis in greater degree than is explainable by the general systemic underdevelopment and lack of resistance that individuals with such abnormality often exhibit. The heart was commonly found to be small in the bodies of individuals dead of tuberculosis, as the result of either wasting or hypoplasia, while the heart was not often large in uncomplicated cases. Stenosis of the pulmonary orifice seems to favor the development of tuberculosis of the lungs, death occurring from the latter disease in a large proportion of cases presenting the former condition.

Arterial and endocardial thickening is a common result of tuberculosis, but it is doubtful whether this process attains a sufficient degree to give rise to valvular incompetency. Tuberculous endocarditis and myocarditis, particularly the former, occur with considerable rarity, but pericarditis, and especially the chronic varieties, is frequently due to the tubercle bacillus. Tuberculosis of the aorta also is found but rarely. The condition, when present, may result in the formation of an aneurism. The cardiac muscle undergoes various forms of degeneration in cases of pulmonary tuberculosis, fatty and fibroid changes being exceedingly common, a fact that explains the failure of digitalis and certain other heart stimulants to bring about beneficial results in cases of this character. Uncomplicated cases of pulmonary tuberculosis often exhibit such striking differences in resistive power and frequently evince such a remarkable tendency toward recovery, even when seemingly hopeless, that only the most absolute evidence should be accepted as proof that either the coincidence of another pathologic condition or the administration of a special remedy has conferred benefit on the patient.

EXCHANGING PROGRAMS. A HINT TO SECRETARIES.

An excellent suggestion was made at the recent meeting of the Federation of Medical Societies of Belgium, held at Brussels. As given in a brief report of the gathering in our foreign news columns last week, the president, Dr. Merveille, who is also editor of the *Gazette Med. Belge*, called attention in his address to the habit of the secretary of one of the federated societies of sending to the central office of the federation a copy of each program, notice, etc., issued to the members of his society. Dr. Merveille spoke of the value of the information thus obtained in keeping the central office in touch with what is going on in the branches. Commenting on this he suggested that it would be a splendid thing if all the secretaries would not only do this, but also send to each other these evidences of what each society is doing.

Why would not this plan be a good one for the county societies of each state to adopt? The extra expense would be trifling in comparison with the good that would surely result. It would keep the different societies in touch with what the others are doing and would be a stimulation to more activity on the part of those which are inactive. The secretaries would thus exchange ideas regarding forms of programs and notices, methods of conducting meetings, etc. It would encourage exchange of essayists, for a secretary would learn that a member of another society was to read a paper on a practical subject, and would thus be encouraged to invite the essayist to read the same paper before his society—especially if it proved to be one that was well received. The programs and notices should be sent also to the councilor of the district, and of course to the secretary of the state society. This would be a stimulation and an inspiration to these officers, who in turn would become more interested in the work. Dr. McCormack, in his report of the work in Indiana (see THE JOURNAL, Nov. 26, page 1648), spoke of the excellent work being done by one society in a scientific way and by another from the business viewpoint, and yet neither knew what the other was doing; nor did the members of societies of adjoining counties know but that these two societies were as inactive as were their own.

If successful work is to be done it will come through co-operation, even to the exchange of ideas. Co-operation, not only among state societies but among county societies, is the fundamental principle in the new plan of organization, and we believe that the suggestion of the president of the Belgium federation, if carried out in those states which have reorganized, will prove to be most excellent and effective co-operation in scientific work.

HOTEL ACCOMMODATIONS AT THE PORTLAND SESSION.

There seems to be considerable fear that Portland will not be able to entertain the Association in a satisfactory manner, because of the Lewis and Clark Centennial Exposition, which will be open at the time of the session of the American Medical Association. To avoid overcrowding from this cause, arrangements have been made so that no other convention or attraction whatever will take place during the week of the Association session. It is advised, however, that all intending visitors make contract immediately for rooms, so that the managers

1. Amer. Jour. of the Med. Scien., October, 1904, p. 649.

of the hotels will have a fair idea of what they may expect. Mr. H. C. Bowers, of the Hotel Portland, agrees to accommodate 4,000 guests comfortably. There are a large number of buildings going up, and Mr. Bowers is making contracts for every available room that is desirable for the week. The rates will be $4 per day for each person, two to go in a room without bath, and $6 per day for each person, for a room with bath. These rates are on the American plan.

I-RAYS AND N-RAYS.

Since the discovery of the Roentgen ray, there has been a vast stimulation of research in this branch of science, but the scientific merits of some of the claims which have been made are still in doubt, while those of others are clear over the line of probability. The N-rays of Blondlot are still *sub judice*, and their reality is doubted by some competent physicists. We are not sure by any means that the really crucial experiments which would demonstrate their existence have yet been made. Now comes the alleged discovery of a still further form of emanations, called by the describer, Di Brazza, the I-rays, closely allied to the N-rays, and given off from the brain during certain psychic processes, such as concentration of the attention. Until these can be proved to be real by physical experiments, absolutely free from suspicion of any subjective errors, it is well to reserve our opinions as to their existence. That they will ever be demonstrated by such positive tests as are the *x*-rays is doubtful. Now comes a British physician, claiming that the N-rays or something of their character emitted by the human body, vary according to the character and disposition of the individual. There will, perhaps, be other announcements of discoveries of the sort, as there is almost no end to the possibilities of subjective deception and credulity. The desire to correlate the psychic and physical takes on this particular development frequently, but invariably fails in the scientific demonstrations.

MR. HULL AND THE ARMY MEDICAL BILL.

Representative J. A. T. Hull of Iowa, chairman of the House Military Committee, in a recent interview published in the *Army and Navy Register*, concerning prospective Army legislation, is reported to have spoken as follows with reference to the Army Medical Bill now before his committee: "The doctors all over the United States are insisting that the Medical Corps should be increased, but to my mind they are asking too much. They all want to be officers of high rank, and think the flow of promotion too slow for them." Such a statement makes those who have had an opportunity to see the Surgeon General's statement of his case wonder if Mr. Hull can have read this strong and convincing argument. The Surgeon General makes it clear that his corps is nearly 200 officers short of the number needed to do the work of the Medical Department in time of peace, that this deficiency is made up by the obsolete, extravagant and unsatisfactory device of employing physicians under contract, that these contract surgeons, not being commissioned officers, have not the honorable and dignified status befitting members of a learned profession. As regards the question of rank and promotion, it is shown that in the reorganization of 1901 the Medical Department suffered severe and unjust discrimination—that the proportion in the higher grades asked for by this bill is less than that enjoyed by the Medical Department before 1901, and less than that at present existing in the Medical Corps of the Navy. An examination of the Army list shows that if the Medical Corps is given everything it asks in this bill, the proportion in the higher grades (and so their prospects for promotion) will still be inferior to that existing at present in most of the other staff departments. When it is remembered, in addition, that only the medical officer has to bear the expense of a long and costly professional education, it is difficult to see on what basis of justice Mr. Hull concludes that the Medical Department "is asking for too much."

MEDICAL ERRORS IN FICTION.

It seems to be the rule, unfortunately, for writers of fiction, when dealing with medical subjects, to pay no attention to facts. This leads to the most ludicrous combinations of symptoms and to descriptions of conditions that can not exist. It is an old fault, and a repetition of this fault from an ordinary writer of fiction would hardly deserve attention here. We have to regret, however, its occurrence in the recent writings of a celebrated author who was educated as a medical man. Dr. Conan Doyle, in "The Adventure of the Golden Pince-Nez," just published, makes Sherlock Holmes say, in commenting on a pair of glasses that had been found, "You will see, Watson, that the glasses are convex and of unusual strength." In another place, speaking of the owner of these glasses, Holmes says: "Unfortunately for her, she had lost her glasses in the scuffle, and as she was extremely short-sighted she was really helpless without them." To make a short-sighted person wear convex glasses, even in fiction, is not to be commended. In dealing with medical subjects, why do not writers of fiction properly inform themselves and so avoid making such ridiculous errors? Not to do this is slovenliness. In this particular instance, the result of the neglect of attention to facts is unusually unfortunate, for it involves our friend, the famous detective, and also his friend, Dr. Watson; and this involvement shows them in a very unenviable light—they are shown to be weak where they should be strong—for Mr. Holmes appears as a poor observer and Dr. Watson as a poorly informed medical man. Holmes calls attention to the physical characteristics of the myope, and speaks of the convex glasses which had been used to counteract short-sightedness. Had this detective been a good observer of people he would have known that concave glasses go with such physical characteristics, and had Dr. Watson been a well-posted physician, he would have set his friend straight as regards the kind of glasses used for correcting myopia. We can agree with Mr. Sherlock Holmes that it would be difficult to name any article which affords a finer field for inference than a pair of glasses, but one is very apt to go wrong if he infers from a pair of convex glasses that the owner is short-sighted.

Medical News.

CALIFORNIA.

Health Officers Appointed.—Dr. Clarence L. Six, Stockton, has been appointed health officer of San Joaquin County, vice Dr. Samuel R. Arthur, Lodi, term expired, and Dr. Fred W. Colman, health officer of Lodi.

Brennan Freed.—Dr. Thomas F. Brennan, accused of embezzling $36,000 from Rev. P. J. Grey, after a long and stubborn fight in the criminal courts, gained his freedom November 12, by the decision of the judge that the information was not filed within three years after the date of the alleged offense.

Needless Apprehension at Merced.—The health officer of Merced reported to the State Board of Health that there were two suspicious cases in Snelling's Chinatown. One case proved to be leprosy, and the other, which it was feared was one of bubonic plague, was demonstrated to be eczema rubrum universale.

Redlands Hospital.—The new hospital for Redlands has been completed at a cost of $25,000, and the equipment is proceeding rapidly, so that the institution will soon be ready to receive patients. The hospital is governed by the following board of directors: Dr. Christopher A. Sanborn, president; Dr. Hoell Tyler, vice-president; Dr. Gayle G. Moseley, secretary, and Drs. J. E. Payton and Charles E. Ide.

COLORADO.

Women Start Free Dispensary.—At a meeting of women practitioners of Denver, held November 23, it was decided to establish and maintain a free dispensary, devoted exclusively to the treatment of women and children.

October Deaths.—The total number of deaths reported in October was 726, equivalent to an annual death rate of 14.71 per 1,000. There were 52 deaths from typhoid fever, 15 from diphtheria and one from scarlet fever during the month.

Communicable Diseases.—During October 349 cases of typhoid fever, 86 of diphtheria, 62 of scarlet fever and 15 of smallpox were reported to the State Board of Health, an increase over the preceding month of 15 cases of diphtheria and 17 cases of scarlet fever, and a decrease of 46 cases of typhoid fever and 4 cases of smallpox.

Pertinent Suggestions to Health Officers.—In order to secure accuracy and uniformity, the State Board of Health has made the following suggestions:

In case of death from cancer, require a statement of the organ or organs involved in the process, or a statement as to whether the process was general.

In case of death from septicemia, peritonitis or hemorrhage in an adult female, require a statement as to whether it was puerperal in character.

In case of death from inanition, marasmus, malnutrition or dropsy, secure, if possible, a definite statement of cause.

In case of death from violence or poison, have the death certificate state whether it was suicide, accident or homicide.

In case of death from tonsilitis, spasmodic croup or other suspicious disease of the throat, investigate as to the question of diphtheria, and require the certificate to show the facts.

Do not accept the statement "heart failure" as a cause of death.

Do not accept senility unless deceased is 65 years of age or more.

Death certificates are required for still births and premature births, provided the fetus is twenty-eight weeks old. In all such cases be sure to see that the death certificate states whether the child lived.

DELAWARE.

Diphtheria in Laurel.—Several cases of most virulent diphtheria are present in Laurel. Two deaths were reported from the disease during the week, and the schools have been closed.

The Ridgely Will Probated.—The will of the late Dr. Henry Ridgely of Dover has been probated. The estate is estimated at from $300,000 to $500,000. With the exception of a few bequests the entire estate is devised to his widow.

IDAHO.

Is State Law Constitutional?—In the case of Dr. J. J. Raaf, arrested at Hailey on the charge of practicing medicine without a license from the State Board of Medical Examiners, the hearing was postponed pending the decision of the District Court on the constitutionality and other features of the medical practice act.

State Society Meeting.—The Idaho State Medical Society met at Lewiston, October 6 and 7. Dr. Robert L. Nourse, Hailey, was elected president; Dr. J. B. Morris, Lewiston, vice-president; Dr. Lucien P. McCalla, Boise, chairman of committee on legislation; Dr. John N. Alley, Lapwai, chairman of committee on nominations; Dr. Ed. E. Maxey, Boise, chairman of committee on publication, and Dr. Caral L. Sweet, Boise, chairman of committee of arrangements. Boise was selected as the next meeting place. The society agreed to contribute $1,000 toward the expense of the meeting of the American Medical Association in Portland.

ILLINOIS.

Smallpox in Marshall.—On November 25 it was reported that there were 10 cases of smallpox in Marshall, with at least four foci of infection. An isolation hospital to accommodate 18 to 20 patients has been prepared, as an epidemic is feared.

Personal.—Dr. Chauncey H. Wilder, De Kalb, first lieutenant and assistant surgeon, Illinois National Guard, assigned Third Infantry, has resigned and will move to Oakland, Cal.——Dr. Robert C. J. Meyer, Moline, lieutenant commander and chief surgeon Naval Militia, Illinois National Guard, has resigned after nine years' service.——Dr. W. E. Taylor, Watertown, superintendent of the Illinois Western Hospital for the Insane, has been elected chairman of the committee on insane and feeble-minded adults, at the state charities convention, November 16.

Recommendations of State Charities Convention.—The convention held at Rockford, November 16, asked for appropriations of $500,000, and adopted resolutions recommending:

The transfer of the Cook County Hospital for the Insane, Dunning, from the care of the county to the state.

The transfer of all insane patients from the various county poorhouses to the state institutions.

The substitution of a "more modern system" for the present grand jury system.

The establishment of an epileptic colony and an appropriation for that purpose from the state legislature.

Investigation and correction of all faulty tenements and dwellings in Chicago.

Passage of a bill compelling the disinfection of houses in which there has been death from consumption.

More adequate appropriation for the state factory inspector's office to enable a more rigid enforcement of the laws pertaining to space and light.

Passage of a bill to regulate the surrender, placing and transfer of children.

Passage of a bill to provide for the visitation of children placed in family homes.

Custody of all feeble-minded women by the state.

Chicago.

Resignation.—Dr. Albert Woelfel has resigned his position in the Memorial Institute for Infectious Diseases to accept an appointment in the department of physiology of the University of Chicago.

Not Proved.—Drs. Earl J. Dennis and T. Henry Ryan, charged with having forged the signatures of 22 professors of the College of Physicians and Surgeons to a diploma issued to David Arthur Moses, have been discharged on account of insufficient evidence.

Deaths from Respiratory Diseases.—In Chicago, from October 15 to November 26, there were reported 2,611 deaths from all causes, 309 from consumption and 294 from pneumonia—ratios of 11.8 per cent. of consumption and of 11.2 per cent. of pneumonia. Since the week of November 12, however, when the Chicago pneumonia season of 1904-05 began, there have been 1,317 deaths reported from all causes, 140 from consumption and 182 from pneumonia—ratios of 11.3 per cent. for consumption and of 13.8 per cent. for pneumonia, and these proportions may be expected to continue until the close of next April.

Vital Statistics of the Week.—During the week ended November 26, 425 deaths were reported, an annual death rate of 11.49 per 1,000. The deaths were 54 fewer than the previous week and 87 fewer than in the corresponding week last year. These figures represent reductions of the annual rates, per 1,000 of population, of 11.2 per cent. and 19.3 per cent. respectively. There is also a substantial reduction from the previous week in the number of pneumonia and typhoid fever patients reported in hospital. On the other hand, there is a continuing increase of minor ailments of the nose, throat and air passages, due to the prolonged dry weather.

MARYLAND.

Hospital Soon to Open.—The Peninsula General Hospital at Salisbury will be opened during Christmas week. President William P. Jackson of the board has furnished the building at a cost of $4,000, and Mr. Walter B. Miller donated a $500 ambulance. The building, a gift of Congressman Jackson, will cost about $60,000. It is heated by steam and lighted by elec-

tricity and will accommodate about 50 patients. The teachers' institute of the county will furnish and maintain one private room. The colored teachers will also furnish a room for their race.

Baltimore.

Club Election.—At the annual election at the Johns Hopkins University Club, November 19, Dr. J. Whitridge Williams was elected president and Dr. Henry J. Berkley governor, for four years.

Personal.—Dr. Claribel Cole, pathologist at the Woman's Medical College, is doing research work under Metchnikoff at the Pasteur Institute, Paris.——Dr. Roland B. Whitridge has returned from Europe.

New Building for Johns Hopkins.—Plans have been completed for a new building to be used for research work at the Johns Hopkins Medical School. It will be 30 by 80 feet, two stories in height and will accommodate the animals susceptible to the various toxins.

New Tuberculosis Building.—The new tuberculosis building at the Johns Hopkins Hospital, adjoining the general dispensary, will be formally opened about January 15. It is the gift of Mr. Henry Phipps of Pittsburg, who gave $20,000 last winter, through Dr. Osler, for a separate dispensary for tuberculous patients. The building is two stories high. It will be equipped with a special library on tuberculosis. The walls are of brick and are painted with white enamel paint and the floors are treated with a non-absorbent preparation. The Laennec Society will have charge of the exercises at the opening. For several years special provision has been made in the general dispensary for the treatment and visiting of tuberculous patients through the generous gifts of two Baltimore ladies.

MASSACHUSETTS.

A Good Ambulance Service.—Boston City Hospital has one of the largest ambulance services in the world. The seven horse ambulances and one automobile at the main hospital and seven other at the relief stations brought in last year 6,767 patients, of whom 1,644, mostly emergency calls, went to the relief station. Besides these, 1,200 patients were taken to the relief station by police ambulances and patrol wagons.

Anniversary of Consumptives' Home.—The Cullis Consumptives' Home, Grove Hill, Boston, celebrated its fortieth anniversary November 20. During these years more than 5,000 patients have been cared for and most of these have ended their days there. The expenses have been over $1,000,000, entirely contributed by friends of the institution. No salaries are paid except to matron and nurses. The property, valued at $225,000, is now free from debt and 150 patients are cared for each year.

Year's Work of Floating Hospital.—At the annual meeting of the Boston Floating Hospital, November 22, Dr. Robert W. Hastings, resident physician, reported that during the season, July 6 to September 15, 290 patients were cared for in the permanent wards, an average of 13 1/3 days each. On 54 days trips were made with day patients, of whom 652 individuals made 2,484 trips, or an average of 46 on each trip. This is a considerable advance over the work done in previous years. Among the permanent patients 133 were 6 months old; 97, 6 to 12 months; 46, 1 to 2 years; 11, 2 to 3 years, and 3, 3 to 5 years; 122 were discharged well, 66 relieved, 13 unrelieved, 88 dead and one untreated. Of the 88 who died, 24 were moribund at entrance and survived less than 48 hours and 279 patients were refused, mostly for lack of room. Urgent efforts are now being made, with good prospects of success, to provide a new and larger boat for next season, which shall have beds for 100 patients instead of the present number, 57, which is inadequate.

Petition for Tuberculous Hospital.—The Boston Association for the Relief and Control of Tuberculosis has elected the following officers for the coming year: President, Dr. Edward O. Otis; vice-president, Dr. Arthur K. Stone; clerk, Alice L. Higgins, and treasurer, George S. Mainford. The good work done during the past year is shown in the report of the secretary. Eighty-two lectures have been given in schools, churches, settlements and before labor unions, to 10,500 people; 80,000 leaflets and cards have been distributed showing how to prevent the spread of the disease, and a tuberculosis exhibit at the fair held in the great Mechanics' Building in October attracted the attention of thousands. A visitor is employed to instruct and care for consumptive poor and is able to help 35 new cases each month. As a result of this contact and the fact that Boston provides only 40 free beds for them at the institutions on Long Island, they have drawn up and are securing signatures to the following petition to the mayor and city council of Boston:

We, the undersigned, citizens of Boston represent:
1. That twelve hundred persons die annually in this city of pulmonary tuberculosis;
2. That at least three thousand persons in the city are not afflicted with this disease;
3. That a very large proportion of these patients can not be properly cared for in their homes, are not fit for the Rutland Sanatorium, and that the present hospital accommodation for such patients is utterly inadequate.
4. That many die who might with proper care be saved;
5. That being inefficiently cared for they infect other members of the family, already worn out by prolonged nursing and watching, and so rendered more susceptible to the disease;
6. That provision for the suitable care of such cases is urgently demanded, both from a philanthropic and an economic point of view.

Therefore, we petition for the immediate erection and maintenance, by the city of Boston, of a hospital for the reception and treatment of all patients in whatever state of the disease who are unable to receive proper care and treatment in their homes.

NEW JERSEY.

Anti-Mosquito Law Failed.—Dr. Henry Mitchell, secretary of the New Jersey State Board of Health, in an address before the Orange Mountain Medical Association, November 18, declared that the work of mosquito annihilation in New Jersey was far from being effective, as the health boards in the state were not willing to advance the money necessary to drain the swamps.

A Malpractice Verdict.—A citizen of North Plainfield who brought suit for $20,000 damages against Dr. Albert Wickham, Newark, for injuries alleged to have been caused by the improper application of a plaster jacket, was given a verdict of $780 in the Supreme Court. The defendant will appeal the case to the Court of Errors and Appeals if the Supreme Court refuses to set aside the verdict.

Sanitarium to Be Enlarged.—The Agnes Memorial Hospital in Montclair, recently erected at a cost of $250,000, with a capacity of 80 patients, now has 100 patients and a second hundred on the waiting list. Mr. Laurence C. Phipps proposes to build a large wing, to cost $100,000, which will have capacity for 100 additional patients. Pending the erection of the wing it is planned to put up tents to accommodate 50 or more patients.

New Sewage System for Atlantic City.—Efforts are being made to install a modern sewage system in Atlantic City. The bad condition of the present system is well known and has long been condemned. A comprehensive plan for a complete reconstruction of the sewage facilities has been adopted by the authorities and will involve an expenditure of $300,000. The system, it is said, will be the most modern and complete in the state.

NEW YORK.

Measles Prevalent.—Fourteen cases of measles have been reported from one public school in Buffalo and closure of the school is contemplated.

Joint Hospital and Asylum Illegal.—Attorney General Cunneen has informed the State Board of Charities that the "Baptist Home of Monroe County" can not be organized under the corporation law, because it proposes to combine a hospital with an orphan asylum. The decision affects a number of similar applications before the board.

Longevity of Abstainers.—A number of actuaries and medical directors of New York insurance companies have been working on statistics running over a period of several years. From the records it is claimed that total abstainers as a class live longer by from 20 to 50 per cent. than moderate drinkers, so that this class of applicants will soon have to pay less for insurance than the moderate drinker.

Vote Against Consumptive Sanitarium.—The Sullivan County Board of Supervisors has denied New York City's application to build a sanitarium for consumptives at Mamakating because of the objections raised by keepers of summer hotels. The city has begun negotiations for 1,000 acres on the top of Mount Shawangunk. The plans for the proposed institution will entail an outlay of $1,000,000 and the cost of maintenance will be $100,000 annually.

Oppose Optometry Examiners.—The committee on legislation of the Medical Society of the State of New York has issued a circular letter to the medical profession of the state giving a history of the attempt of the Optical Society of the State of New York to have enacted a law creating a state

board of examiners in optometry. The state society, various county societies and the Optical League secured the defeat of the measure. The organization is now endeavoring to gain the indorsement of the medical profession, to be used before the next legislature. On account of the irregular methods practiced by the promoters of the scheme, the committee urges the profession to refuse to indorse the measure and to present the case in its true light to the members of the legislature and urge them to oppose it.

Typhoid Statistics.—The health department has made a detailed investigation concerning cases of typhoid fever reported to the department. According to the report of the inspector approximately 30 per cent. of the cases were incorrectly diagnosed typhoid fever, many cases indicating intestinal toxemia, while others had intestinal disturbances in all likelihood occasioned by temporary water disturbance. Many cases sent to the hospitals as typhoid turned out to be some other sickness than typhoid. All cases in which the Widal test was positive were typhoid. Of the 145 cases examined 97 occurred in families which were not boiling their drinking water, and 41 cases occurred in families in which the drinking water was boiled. Of the 145 cases of typhoid, 95 were mild and 50 severe; 10 lasted less than two weeks, 96 from two to seven weeks, 12 from six to ten weeks, and 7 from ten to eighteen weeks. Only 27 of the patients had been out of the city during the incubation period.

New York City.

Seaside Camp for Tuberculous Children.—This work, begun by the Association for Improving the Condition of the Poor, met with such success that it has been decided to keep the tent camp open all winter.

Brooklyn Jewish Hospital.—The annual report of this institution, which has been in existence only three years, shows that it has grounds and buildings valued at $175,000 and $80,000 in cash and pledges.

Eulogium to Dr. Pryor.—At the annual meeting of the New York Polyclinic Medical School and Hospital, November 10, resolutions were adopted eulogistic of the late Dr. William Rice Pryor, and expressing the sorrow of the faculty at his death.

New Brooklyn Hospital.—The application of the Brooklyn and Samaritan Hospital Association for articles of incorporation has been granted by the State Board of Charities at Albany. A building will be erected near Fifteenth street and Fourth avenue.

The Pure Milk Crusade.—Recently the fines imposed in Brooklyn for adulterating milk have been accompanied by the severer penalty of imprisonment. Even after the active work of the Health Department, during the past three months 205 dealers have been arrested and 32,000 gallons of milk destroyed.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended November 19, 323 cases of diphtheria, with 36 deaths; 275 cases of tuberculosis, with 147 deaths; 107 cases of typhoid fever, with 18 deaths; 174 cases of scarlet fever, with 15 deaths; 83 cases of measles, with 7 deaths; 114 cases of varicella, 4 cases of smallpox, and 13 deaths from cerebrospinal meningitis.

Disease in Schools.—Pediculosis capitis has prevailed to an alarming degree in the public schools. It is said that of 283,000 children 23,000 are thus afflicted. It has been customary hitherto to send these cases to the school nurses for treatment, but the Board of Health has instituted a plan by which the nurses are sent into the homes, where they instruct the mothers as to the proper method of coping with this condition. If parents refuse to follow instructions, affected children will be excluded from school, and when they are kept out too long, the parents will be arrested on the charge of interfering with the compulsory education law.

Need Endowment.—At the one hundred and fiftieth anniversary of King's College, Columbia University, Dr. McCracken, the chancellor, called attention to the fact that in point of numbers, medical instruction in this city was declining. Twenty years ago there were in New York City and state 2,085 medical students and, at the present time, there are 2,374. In the whole country there has been an increase of 153 per cent., while in New York state the increase has been only 13 per cent. In New York City itself there has been an actual decrease of 10 per cent. This is not because the medical schools are unworthy of patronage, but because of lack of endowment and paucity of material equipment of the schools. There is a lack of building room and a large number of well qualified students have been turned away.

PENNSYLVANIA.

Diphtheria in Coventry.—Diphtheria is widely prevalent in East Coventry and the northern section of Chester County. Numerous cases and several deaths have been reported in the last week.

A Tall Legislator.—Dr. Andrew J. Barchfield, Pittsburg, who has recently been elected representative from the Thirty-second congressional district, will be the tallest member of the House of Representatives. He is a member of the local and state societies and of the American Medical Association.

Food-Analysis Laboratory.—The state has instituted measures whereby a laboratory for the analysis of food samples secured by the pure food department will be established. A building for this purpose has been secured in Harrisburg. At present all food samples are sent to West Chester and State College for analysis.

Goiter in Rossiter.—Goiter seems to be epidemic in Rossiter, Indiana County. Investigation shows that the disease is peculiar to that neighborhood. The hamlet is situated about 1,900 feet above the level of the sea, and it has been demonstrated that every third inhabitant is a subject of the disease. Healthy persons moving into the section soon become affected. One family of nine persons contains four with goiter and four cretins. The population is made up of Americans who have lived there three generations. The cause of the disease is attributed to the water supply, which is impregnated with salts of lime and magnesium.

State Health Report.—Dr. Benjamin Lee, secretary of the State Board of Health, in his annual report emphatically recommends a law making vaccination compulsory. The recent epidemic of smallpox demonstrates the importance of this step. His report shows that 5,172 cases of smallpox, with 13 deaths, occurred in this state last year. The number of cases at present is only 42. He further urges a law for the immediate registration of deaths and births at the state capital, a law establishing local health authorities outside of the cities and boroughs, and a law providing for state control over public water supplies. He commends the activity of the Philadelphia Board of Health in enforcing vaccination. In that city during the year 1903, 142,397 vaccinations were performed, with the result that the number of cases of smallpox decreased from 396 in December last to 26 in June of the present year and none in July.

Philadelphia.

Donation to German Hospital.—At the annual donation day on Thanksgiving Day, the German Hospital received $12,000 in cash.

Frazier Receives Appointment.—Dr. Charles Frazier, dean of the Medical Department of the University of Pennsylvania, was appointed on the major surgical staff of the Hospital of the Protestant Episcopal Church, November 25, vice Dr. Richard Harte, resigned.

Vaughan in Philadelphia.—Dr. Victor C. Vaughan of the University of Michigan will deliver an address before the Philadelphia Pathological Society at the College of Physicians, December 8, on "The Relation of Food Adulteration to the Public Health." Immediately after the meeting a reception will be tendered to Dr. Vaughan.

New Animal Hospital.—The directors of the Zoological Gardens have just completed the erection of a thoroughly equipped infirmary and pathologic laboratory, the first of its kind in this country. The purpose of this infirmary is to study the comparative pathology and also the cure of animal diseases. The laboratory work will be carried on under the direction of Dr. Charles B. Penrose, a director of the society, and Dr. Cortland Y. White, assistant director of the Pepper laboratory of the University of Pennsylvania.

Jefferson Library Report.—The report of the librarian of the Jefferson Medical College library for the year just ended showed some interesting and noteworthy facts concerning the contents and circulation of the college library. There were 3,000 volumes in the library, of which 430 were added during the year; 203 by gift and 230 by purchase and binding, the largest gift being 78 volumes from the library of the late Dr. C. W. Horner. There are fewer than 2,000 volumes of general text-books in the library and from these there was a circulation of 10,663 volumes.

Health Report.—Typhoid fever seems to be decidedly on the increase. The cases reported for the week were 29 more than those of last week. The increase is reported from wards not supplied with filtered water. Diphtheria also prevails to an alarming degree. The record-breaking figure of 119 cases reported last week was exceeded this week by 5. There were 296 cases of contagious disease reported, with 13 deaths, as compared with 249 cases and 18 deaths for the preceding week. The death rate for the week was about normal, and the total number of deaths reported was 417. This is an increase of 10 over those of last week, and a decrease of 78 over the corresponding period of last year. Diseases of the respiratory tract caused 111 deaths.

GENERAL.

Professor Hirschberg to Attend the Portland Session.—The officers of the Section on Ophthalmology announce that Professor Hirschberg of Berlin has accepted an invitation to be the guest of that section at the Portland session and to present an address. In his letter to the chairman of the section, Professor Hirschberg says: "This will be my third, and, I think, my last trip to the United States." The section officers are to be congratulated on securing Professor Hirschberg, as his reputation among ophthalmologists is worldwide.

Gross Prize.—The Samuel D. Gross prize of $1,200 will be awarded Jan. 1, 1905. The conditions are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding 150 printed pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice, founded on original investigations, the candidates for the prize to be American citizens." The competitor who receives the prize must publish his essay in book form, and deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery. The essays must be written by a single author in the English language and must be sent to the "trustees of the Samuel D. Gross prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 South Thirteenth street, Philadelphia," on or before Jan. 1, 1905. Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

American Public Health Association.—The latest information concerning rates to this meeting in Havana, Cuba, in January is given by Dr. H. L. E. Johnson, 1821 Jefferson place, Washington, D. C., as follows: Members of the Public Health Association can take advantage of an excursion from Washington, D. C., Virginia and the Carolinas to Havana, Cuba, via Tampa, round trip, meals and berth included on ship, for $52. Leave Washington, Jan. 5, 1905; arrive Havana, January 8, a. m. Number of passengers limited to 150 out of above territory. Tickets good to leave Havana not later than January 19, reaching the starting point January 22, with stopoffs south of Jacksonville within life of ticket. Members can purchase locally to Washington or other nearer points in above territory, then purchase the special excursion ticket. If 18 passengers go via Washington, we can arrange for a special sleeper attached to train No. 29, Southern Railway, leaving Washington, D. C., 10:51 a. m., January 5. Those desiring to take this trip can communicate with Dr. Johnson. In this connection consult the published statements concerning rates to the Pan-American Medical Congress. As we go to press we receive the following information from Dr. Guiteras: "The program of the American Public Health Association will be an inviting one and of an important character. The Cuban committees are making extensive preparations for the entertainment of the congresists. From the returns now coming in it would seem that at least one-half of the members of the Public Health Association will make the round trip to both medical meetings. It is understood that the Pan-American 'congresists' who do not belong to the Public Health Association will be invited by this association to take part in their discussions as guests, and that they will also be invited by the Cuban entertainment committee to participate in the festivities."

Cuban Yellow Fever Report Denied.—Dr. Carlos Finlay, chief of Department of Health and Sanitation, Havana, is reported as saying that in three years only one case of yellow fever has occurred in Cuba, while Dr. Delgado, also of Havana, disclaims any knowledge of yellow fever cases this year, except in six persons who arrived from Mexico and who were immediately isolated. Of these, two died and the others recovered. The U. S. Public Health and Marine Hospital reports state that Cienfuegos is in an insanitary condition. "There is practically no sewerage system in the city. The streets in the business section are kept fairly clean by daily sweeping. In the residence section, especially near the bay front, the streets are not kept at all clean, fruit and food refuse being allowed to remain in them all the time. The houses of the poorer people—who are three-fourths of the population—are positively filthy from accumulation of ordinary house refuse. There are very few flush water-closets, and none that connect with sewers. Nearly all are surface closets in the houses of the poorer class, and these are seldom cleaned. The better classes of houses have cesspools. These have not been cleaned for four years. The drinking water of the city is of poor quality and not in nearly sufficient quantity, the water pipes being open only from one to two hours in the day. Cienfuegos is in a very insanitary condition from every point of view."

Pan-American Medical Congress.—Physicians desiring to contribute papers on internal medicine at the next meeting of the Pan-American Medical Congress at Panama, Jan. 2-6, 1905, are asked to send titles at their earliest convenience to the secretary of the section on medicine, Dr. Judson Daland, 317 South Eighteenth street, Philadelphia. In view of the facilities offered to reach Panama via New Orleans it is expected that many will choose this route and those who intend to do so are asked to forward their names to Dr. R. Matas, secretary of section on general surgery, 2255 St. Charles avenue, New Orleans, not later than Dec. 22, 1904. Dr. H. L. E. Johnson, chairman of the transportation committee, sends the following further information about rates, etc.: The Di Giorgio line of Baltimore offers a special ship for the exclusive use of party, including meals and berth, at sea and in ports, to Panama, Havana and return, attending both meetings and visiting Kingston and Port Antonio, Jamaica, for $130—provided 50 persons take passage. The *Athos* will leave Baltimore December 27, 11 a. m.; arrive Panama, January 2, p. m. or 3, a. m.; leave Panama, January 7, a. m.; arrive Havana, January 9, a. m.; leave Havana, January 13, p. m. or January 14, a. m. for Jamaica; arrive Baltimore, January 18. All arrangements must be made ten days before date of sailing. Passengers limited to 70. Apply to Ralph F. Nolley, 103 Park avenue, Baltimore. Panama Railroad and Ship Company: Rate from New York to Panama, one fare and a third for round trip; upper deck, $133.33; lower deck, $113.33. United Fruit Ship Company: Rate from New Orleans to Panama and return, $50; one way, $25. In connection with this, read previous announcements in THE JOURNAL. Dr. Ramon Guiteras sends the following names of secretaries of sections which were not in his letter of October 25, which was published in THE JOURNAL, Nov. 5, 1904: Dr. C. W. P. Brock, Richmond, Va., railway surgery; Dr. H. P. Newman, Chicago (present headquarters at the New St. Charles Hotel, New Orleans), gynecology and abdominal surgery; Dr. Howard Morrow, San Francisco, dermatology. Dr. Guiteras is secretary of the International Executive Commission of the congress and may be addressed at 75 West Fifty-fifth street, New York City, for further information. He remarks that the cruise of the *Athos* will probably be a memorable one like those of the old buccaneers.

CANADA.

No Sanitarium for Kamloops.—The government of British Columbia has assured the Anti-Sanitarium League of Kamloops, B. C., that they have no intention of thrusting a sanitarium for consumptives on that place if the feeling of the citizens of Kamloops is against it. British Columbia will, therefore, have to look elsewhere for a location for their provincial sanatorium.

Vancouver Hospital Report.—Drs. G. D. Johnston and Glen Campbell of Vancouver have been appointed on the staff of the Vancouver General Hospital as ophthalmologists, otologists and laryngologists. The house surgeon's report for the month of October is as follows: Remaining from September, 39 males and 11 females; admitted during the month, males 54, females 15; cured, males 44, females 14; died, 2; remaining in the hospital, males 47, females 12.

Form Inebriate Reform Society.—The Inebriate Reform Society of Ontario has been organized in Toronto to promote the adoption of the probation system for the reformation of inebriates and of the home or dispensary treatment in suitable cases, and to promote the establishment of municipal sanatoria for indigent inebriates. The society will endeavor to push

through the bill which has been drafted at the next meeting of the legislature. Dr. A. M. Rosebrugh, who has taken a great deal of interest in this movement, will be the permanent secretary.

Municipal Sanatoria for Ontario.—The initial step has been taken in establishing municipal sanatoria for the indigent consumptives of Ontario. Special assistance will be provided by the legislature. Representatives from Brant, Oxford, Perth, Wellington and Waterloo counties met in convention at Galt, Ont., and each of these representatives will have the matter brought before their respective county councils. Dr. Radford of Waterloo presided, and gave the statistics for the Dominion of Canada as regards tuberculosis. According to his report there are 6,000 deaths in the dominion every year; 2,694 in the province of Ontario. The approximate number of consumptives in the dominion is 40,000 and in the province of Ontario 15,000.

Army Medical Corps.—A recent militia general order states that, for the purposes of promotion, the officers of the permanent active militia army medical corps and officers of the militia army medical corps will be considered as belonging to two distinct branches, and promotion will take place on the same principle as that in a regiment or corps. Promotions subject to the necessary qualifications will take place as follows: After one year's service as lieutenant, to be captain; after four years' service as captain, to be major. After ten years' service as major, regimental officers may be given the rank of honorary lieutenant-colonel, and their period of service extended or they may be transferred to the reserve of medical officers or the retired list, as the case may be.

Montreal General Hospital Report.—At the quarterly meeting of the board of governors of Montreal General Hospital last week, the report of the medical superintendent, Dr. Campbell, for the three months ended September 30, showed that 829 patients had been treated to a conclusion during that quarter and that there had been 57 deaths, 21 of which had occurred within three days of their admission. This makes the mortality rate for ordinary hospital cases 4.3 per cent. In the outdoor departments there were 10,235 consultations, as compared with 9,692 for the corresponding quarter of 1903. The ambulance responded to 375 calls. The committee of management reported that the receipts for the quarter were $14,918, or $942 less than for the same quarter last year. The expenditure amounted to $24,888, showing a decrease of $4,155, as compared with 1903.

FOREIGN.

Lectures on Sexual Hygiene.—Prof. Max Gruber is to deliver a course of six lectures at the College of Technology at Munich on "Hygiene of the Sexual Life."

Endowment Fund for Library of Berlin Medical Society.—Professor Lassar has started an endowment fund for the purchase of works of historical value, libraries, etc., to add to the library of the Berlin Medical Society.

The Mayor of Strasburg an Honorary M.D.—The medical faculty of Strasburg, Germany, has conferred an honorary degree on the mayor of the city, on the occasion of his seventieth birthday. The honor was in appreciation of his great services in promoting the public health.

New Psychiatric Clinic at Munich.—The new clinic was formally inaugurated by Professor Kraepelin, November 7. It is said to be the most completely equipped and convenient institution of the kind yet erected. It has 100 beds and a number of innovations designed by the late Professor Bumm.

Convalescent Home at Wiesbaden for Russian Officers.—The Russian Red Cross has opened a convalescent home at Wiesbaden for Russian army officers. The institution is also to admit German army officers when there is room. Dr. Prüssian is the resident physician, with von Noorden of Frankfort as consultant.

Postgraduate Courses for Life-Insurance Examiners.—The medical examiners in Germany held their annual meeting at Berlin last month. One of the addresses was on the subject of the training in this specialty. The speaker urged that the new academies for practical medicine—the first one was recently inaugurated at Cologne—are pre-eminently the institutions to establish postgraduate courses in scientific medical examination for life insurance.

Spanish Physicians Heroes in Smallpox Outbreak.—The *Siglo Medico* of Madrid is circulating a petition asking for the reimbursement and reward of certain physicians in the smaller towns who, during recent epidemics of smallpox, tended the victims, obtained food and served it to them after they had been deserted by their friends, and finally buried with their own hands those who succumbed. Eight physicians are mentioned by name, residing in as many different towns, who have done this, their unassisted efforts restricting the epidemic to the houses where the first isolated cases occurred.

Testimonial to Naunyn.—The attention of all who have at any time been pupils of Professor Naunyn at Berlin, Dorpat, Berne, Königsberg or Strasburg, is called to the following notice:

STRASSBURG i. E., im November, 1904.

An die Schüler von Prof. Naunyn:

Herr Prof. Naunyn hat am Schlusse des vergangenen Semesters sein Amt als Lehrer der Inneren Medizin niedergelegt.

Wir wenden uns an alle, die während seiner annähernd 40 jährigen Tätigkeit durch seine Schule gegangen sind, mit der Aufforderung, ihm in einer gemeinsamen Adresse zu danken.

Die Schüler Prof. Naunyns werden gebeten, uns ihre Namen und Addressen mitzuteilen, damit wir ihnen Blätter zum Eintragen der Unterschriften zusenden können.

PROF. NAUNYNS LETZTE SCHULER.

I. A. Heimendinger, cand. med.; Zschocke, cand. med.

Zuschriften zu richten an: Zschocke, Lessingstrasse 31, III, Strassburg i. E.

Educational Number of the Progres Medical.—The issue for Nov. 5, 1904, of the *Progrès Médical*, Paris, rue des Carmes 14, is devoted entirely to the institutions for medical instruction and information in France and other French-speaking countries. The list of the latter includes, beside those of Montreal and Quebec, the medical schools at Brussels, Ghent, Liège, Lausanne and Geneva, and the school of medicine and pharmacy at Beyrouth, Syria. It states that the scientific information bureau established at Paris in August, 1903, has had from forty to eighty applicants a day. It is designed to supply all the information desired in regard to the lecture courses, laboratories, hospitals, clinics, museums, public and private services, etc., existing at Paris. It is open from 10 to 5, and can be reached by telephone. The attendants are versed in the current foreign languages, and all the details are classified on the card catalogue system, grouped by establishments, specialties and persons. Another system of cards comprises the details that might have special interest for applicants from given countries. The data in regard to medical institutions in this country and elsewhere are also classified for the benefit of French students. The office is in the Sorbonne, and is in charge of Dr. Blondel, who is secretary general of the International Association of the Medical Press. Berlin and London are planning similar information bureaus.

Annual Burlesque Number of the Munich Medicinische Wochenschrift.—Two numbers of our esteemed contemporary arrived in the same mail, the general make-up apparently identical, the stately list of the collaborators, however, in one being headed—in very small type—"without the slightest participation of." The ads include one for an assistant who "knows enough not to criticise his chief and not so much that the clientèle will prefer him." Another advertises for a librarian capable of cataloguing the drug pamphlets and circulars that arrive in the mail daily. A health resort advertises for a resident physician, "a handsome musician preferred, no testimonials required, merely the photograph." One of the original articles describes a new mode of narcosis with ethyl chlorid. The essential principle of the ethyl chlorid was extracted, that is, its refrigerating property, and that was transferred to a vehicle which carried the refrigerating property into the digestive tract. The vehicle found most appropriate is champagne. After long spraying of the bottle with ethyl chlorid the contents were ingested and, after a stage of agitation, profound narcosis was induced. The only drawbacks are nausea and oppression in the cavum cranii the next morning. The radiogram of a remarkable fracture is given, the picture being merely a solid black square. The "Rights and Duties of the Physician's Wife" are discussed, and the practice of one wife is commended who always added a cipher to the bills her husband made out before she had them mailed. The abstract department contains reviews of the *Grenzgebiete der Utopie und Ironie*, xiii. The first—"Laparotomies under Water" summarizes a description of an epoch-making operating chamber, filled two-thirds with warm water. The head of the patient is enclosed in a helmet like that of a diver, into which the anesthetic is conveyed in a tube. The surgeon and aids wear rubber suits. The purpose of this operating chamber is to prevent the cooling of the interior of the abdomen, and also to insure its being thoroughly rinsed, so that any bacteria introduced during the operation will be rapidly destroyed. As the heads of the operators project, they can be given refreshments from

time to time. The second abstract states that Strahler has found that the eruption in scarlet fever vanishes under intense application of red light. The effect is only temporary, however, the eruption recurring as soon as the red light is withdrawn. Another advocates an indelible ink, invented by Schmierer, to mark on the patient's body the various findings to enlighten other examiners later. Gynecologists should stamp their patients after hysterectomy with some device. The wittiest article in the burlesque is a letter purporting to be from a school girl to her chum in another city describing the progress she is making in the new course on "sexual enlightenment" which the doctors say is indispensable and which has recently been introduced into her school. She writes that the study was tedious at first, when there was nothing but the everlasting division of the cells of the protozoa, algæ and sea urchins, but when they got to the mammals it became very interesting, especially when the class was taken to the medical museum to see the babies in whisky. She adds that none of the girls play with dolls any more. They find that dolls have no sex. They have all told the younger children about the "sexual enlightenment," and all play at "getting married." Class B in the fourth grade have recently written to Haeckel, "the biogenesis man," to ask him to send them some human eggs for Easter. She further informs her friend that the girls know now that when they fall in love it is merely on account of concern for the sexual products. The burlesque is well conceived and carried out, especially the skits on the medical conflicts with the sick insurance companies, the opposition to the new academies for practical medicine, etc.

Correspondence.

National Association for the Study and Prevention of Tuberculosis.

BALTIMORE, MD., Nov. 21, 1904.

To the Editor:—At a meeting of the board of directors of the National Association for the Study and Prevention of Tuberculosis in New York, Nov. 16, 1904, it was decided to hold the first annual meeting in Washington, D. C., May 16-17, 1905; having one or two general sessions with distinguished speakers on the broad topics of tuberculosis, and special meetings of the three following sections: sociologic, pathologic and bacteriologic, clinical and climatologic, and that, so far as possible, these sectional meetings should not conflict one with another, each section to be presided over by men distinguished in their respective work, and only papers of undoubted merit and interest may be presented.

The membership of the association includes a large proportion of the most eminent workers in the subject of tuberculosis throughout the country, and it hopes to make its first annual meeting an important one in the crusade in this country against tuberculosis.

HENRY BARTON JACOBS, Secretary.
11 Mt. Vernon Place, West.

Prophylaxis of Tuberculosis in Children.

SKIPPACK, PA., Nov. 16, 1904.

To the Editor:—On page 1460 of THE JOURNAL, November 12, Dr. C. F. Wahrer, in discussing Dr. Louis Fisher's paper, "gave it as his opinion that if a child born of two healthy parents was exchanged for a child born to one or two diseased parents, so that the healthy parents were to take care of the child born of diseased parents, and the diseased parents were to care for the child born of healthy parents, the child that is reared by the healthy parents will have a far better chance of life, notwithstanding its inheritance, than the child that was born of healthy parents but reared in unhealthy environment."

Possibly if some of us would not be blinded by the brilliant (?) statistics emanating from our laboratories and specialists, and would use our eyes a bit, along with just a small amount of the common sense with which we are all more or less endowed, we would not be guilty of such an assertion. Tuberculosis does not just happen because one inhales or swallows a billion or two of the bacilli. The insane, the epileptic, the drunkard, the thief, the cancerous, the syphilitic, as well as the tuberculous, inherit as children whatever diseased or vicious tendencies they may manifest in after life. Practicing in a section where I lived as a boy, and where the past and present history of every family is known to me, I know that of a certain family, a certain percentage of the immediate or remote descendants will be degenerates and will manifest their faulty inheritance by drunkenness, insanity, epilepsy or other moral or physical weakness; of others that a certain proportion, depending on environment, will develop tuberculosis in its various forms. And I know, just as sure as night follows day, that these things will happen. Heredity is law always and ever. Let us not work ourselves into a frenzy over the presence of a few bacilli, but rather strive to make all soils barren to them, by having our children better born. This is the real work cut out for us; all the rest is simply kindergarten. We will all wake up bye and bye to a full realization of the law of heredity. But we are sleeping very soundly.

J. NEWTON HUNSBERGER.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

SPECIFIC GRAVITY OF BLOOD—HAMMERSCHLAG'S METHOD.

LOS ANGELES, CAL., Nov. 16, 1904.

To the Editor:—In THE JOURNAL, March 19, 1904, page 801, an article on the specific gravity of the blood recommends the use of Hammerschlag's method. Will you be kind enough to give a full description of his method, one that would be suitable to give to a freshman medical class. T. H. ULLYOT.

ANSWER.—Hammerschlag's method is described in all books on examination of the blood. We reproduce here the statement in regard to it in Cabot's book: "The simplest and most available method for clinical use (in estimating specific gravity of the blood) is that of Hammerschlag, a modification of Roy's method. Chloroform is heavier than blood; benzol is lighter. Mix in a urinometer glass such quantities of the two that the specific gravity taken by an ordinary urinometer is about 1059, i. e., that of normal blood. Puncture the ear, draw a drop of normal blood into the tube of a Thoma-Zeiss pipette, a small medicine dropper, or any other capillary tube, and blow it out again into the chloroform-benzol mixture. The blood does not mix at all with these liquids, but floats like a red bead. If it sinks to the bottom, add chloroform, if it rises to the top, add benzol, until finally the drop remains stationary in the body of the liquid, showing that its specific gravity is just that of the surrounding mixture. Then take the specific gravity of the liquid, as we do of urine, and you have the specific gravity of the drop that floated in it. The following precautions are needed: 1. Have the inside of the urinometer glass perfectly dry and clean; otherwise the drop of blood may cling to it and flatten out against it. 2. It is usually well to have more than one drop of blood in the glass in case any mishap occurs with the first one. 3. Add the chloroform and benzol a few drops at a time, and after each addition stir the whole mixture thoroughly with a glass rod. 4. If we have reason to suppose the blood will be lighter than normal (i. e., if the hemoglobin is probably low, vide supra), it saves time to start with a lighter mixture of chloroform and benzol. 5. Avoid having any air within the blood drop. This can generally be seen either in the capillary tube or after the drop is in the mixture. It is safer to take the middle portion of the blood drawn into the capillary tube, as both the first and last portions of the column are more apt to have air in them. 6. The whole process should be done as quickly as possible, else the chloroform or benzol may work into the blood drop and affect its weight. It is better to have a urinometer with a scale running as high as 1070, but this is not essential, for the clinically important specific gravities are low, not high."

INTERNAL VACCINATION.

PHILADELPHIA, November 25, 1904.

To the Editor:—While agreeing with your editorial (p. 1,636), and the reply to a correspondent on p. 1,642, vol. xliii, No. 22, as to the mistaken idea of the value of the ingestion of smallpox virus, I want to call attention to the fact that certain antitoxins may rightly be administered by the alimentary canal.

Maragliano, and others, have shown that tuberculous antitoxin is effectual so administered (Annali dell' Instituto Maragliano, Genoa, September, 1904).

It seems reasonable that antitoxin should be effectual if so given, for any organic matter is not entirely broken up in the alimentary channels, at least to the immediate loss of identity. Maragliano shows that the milk and the proteid tissue of immunized animals exerts a decided antitoxic influence on other animals ingesting the same. T. H. EVANS, M.D.

ANSWER.—We discovered the report referred to after we had written the answer to the query. Maragliano's announcements that tuberculous antitoxin is effectual administered by the mouth were summarized in THE JOURNAL, pages 71 and 961 of the last volume, and also mentioned on page 579 of the current volume. His latest confirmatory researches corroborate his previous statements, both in regard to the action of antitoxin in the alimentary canal and in regard to the antitoxic and agglutinating power acquired by the milk of immunized animals, which von Behring has also been proclaiming. (See page 621 of the last volume.)

RATES TO PORTLAND.

HARTFORD, Conn., November 24, 1904.

To the Editor:—Can you inform me whether it is probable that arrangements will be made for reduced rates from the East to Portland and back, which can be availed of by say June 1, so that those wishing to take the Alaska trip may do so before the season on July 11. I am told that June is the time for the trip. Will stop-overs at Yellowstone Park be allowed? I would like to attend and incidentally to give my family an outing. S. B. ST. JOHN.

ANSWER.—The probability is that the rates will be proportionately reduced from all parts of the country, i. e., half rates to Missouri River points, from which the rate will be $45 for the round trip. It is probable that the special rates will go into effect about the third week in MAY, but official announcement of the time has not been issued. Stop-overs will be allowed at Yellowstone Park. In this connection read the editorial in this issue and the one printed November 12, page 1,474.

PHYSIOLOGY OF THE BRAIN.

OCONTO, Wis., November 25, 1904.

To the Editor:—I have been reading of late Loeb's "Physiology of the Brain." I would like to read more in that line; could you advise me? I invested in the latest edition of Kirke's Physiology, but that gives me little satisfaction. I also possess Sajous', vol. i, "The Internal Secretions," etc. I should like to have some works to show things developed along this line during the last twenty years. C. W. STOELTING.

ANSWER.—You will find five chapters on the "Physiology of the Brain," also on the "Physiology of Internal Secretions" in the last edition of the American Text-Book of Physiology, two volumes, by Wm. H. Howell of Johns Hopkins University. Published by W. B. Saunders & Co., Philadelphia, 1900.

LAWS OF PRACTICE IN MEXICO.

TULSA, IND. TER., ———, 1904.

To the Editor:—Please give the laws governing the practice of medicine in Mexico. J. C. B.

ANSWER.—The practice of medicine in Mexico is free, but to have any legal standing, to be able to sign death certificates, to give testimony or to hold medical positions, one will have to pass an examination, in Spanish, varying in severity in the different states. There would be some inconvenience in general practice without such a license in certain states of the republic. In others, a license may be less a requisite. A very full description of the laws and the conditions of the practice of medicine in Mexico was published in THE JOURNAL, Dec. 23, 1899, p. 1629.

Marriages.

GEORGE SEAY, M.D., to Miss Rosa Cardoza, at Blackstone, Va., November 15.

HARRY A. MEISNER, M.D., to Miss Mary L. Wernig, at Baltimore, November 16.

LEONARD K. HIRSHBERG, M.D., to Miss Edna Dalsemer, at Baltimore, November 24.

CHARLES E. BENSON, M.D., to Miss Angelina J. Keenan, at Baltimore, November 14.

JOHN NEVINS, M.D., to Miss Bessie Haggarty, both of Greene, Iowa, November 15.

JOHN A. TOMPKINS, M.D., to Miss Fredericka Gore McLane, both of Baltimore, November 19.

REMY G. DUCOTÉ, M.D., to Miss Florence Bordelon, both of Bordelonville, La., November 15.

ALPHONSO J. MCLAUGHLIN, M.D., to Miss Stella Potter, both of Sioux City, Iowa, November 16.

A. LEE CARMICHAEL, M.D., Little Rock, Ark., to Miss Rose Beach of Kansas City, Mo., November 16.

NICHOLAS LEEKE DASHIELL, M.D., to Miss Amelia Eleanor Marine, both of Baltimore, November 23.

ERNEST D. HAMMOND, M.D., to Miss Inez Blanche Wilson, both of Salt Lake City, Utah, November 24.

JAMES A. FARNER, M.D., Dayton, Ohio, to Miss Cora L. Kauffman of Miamisburg, Ohio, November 16.

GEORGE DEMPSTER HAMLEN, M.D., to Mrs. Estelle Louise Berckmans, both of New York City, November 21.

WILLIAM CHARLES KETTEL, M.D., Lyons, Neb., to Miss Eunice Una Rohde of Oakland, Neb., November 9.

FREDERICK UPHAM DAVIS, M.D., St. Clair, Minn., to Miss Erna Marie Lassow of Mankato, Minn., November 23.

HOWSON W. COLE, JR., M.D., assistant surgeon U. S. N., to Miss Helen Fay Pendleton, at Annapolis, November 19.

J. B. DOUGHERTY, M.D., New Berlin, Ohio, to Miss Jeannette R. Evans of Emporia, Kan., at Granville, Ohio, November 17.

Deaths.

Nelson L. North, M.D. College of Physicians and Surgeons in the City of New York, 1854, of Brooklyn, a member of the American Medical Association, New York State Medical Association, New York Academy of Medicine; physician and consulting surgeon to the Methodist Episcopal Hospital, and the Williamsburgh Dispensary, one of the oldest and most esteemed physicians of the Eastern District of New York, died suddenly from pulmonary hemorrhage, November 23, in Brooklyn, aged 74.

Seth S. Ulrich, M.D. Jefferson Medical College, Philadelphia, 1881, associate professor of surgery in Baltimore Medical College, a member of the Medical and Chirurgical Faculty of Maryland; surgeon-major Maryland National Guard, attached to the Fourth Infantry; surgeon to the Baltimore & Ohio Railroad, died suddenly from angina pectoris at his home in Baltimore, November 20, aged 46.

D. Bird Miller, M.D. Bellevue Hospital Medical College, New York City, 1874, formerly county physician of Richland County, S. C., and assistant superintendent of the State Hospital for the Insane, Columbia, died suddenly at his home in that city November 11, from heart disease, aged 54.

Elbert Mortimer Somers, M.D. College of Physicians and Surgeons in the City of New York, 1853, surgeon of the 146th New York Volunteer Infantry in the Civil War, and postmaster of Deansboro, N. Y., from 1861 to 1869, died at his home in that city after a long illness, aged 79.

Joseph Hume Taylor, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1876, a member of Lapeer County, Michigan State and Northeastern medical societies, died at his home in Lapeer, Mich., November 24, from general tuberculosis, aged 53.

Driesbach Smith, M.D. Cooper Medical College, San Francisco, 1885, and professor of nervous diseases in that institution, formerly assistant physician at the Napa State Hospital, died at the Marine Hospital, San Francisco, November 16, from disease of the spinal cord, aged 42.

Charles V. Mottram, M.D. Indiana Medical College, Laporte, 1847, surgeon of the Sixth Michigan Volunteer Cavalry during the Civil War, for several years under treatment at the Northern Michigan Asylum, Traverse City, died in that institution November 6, aged 85.

Robert Morris, M.D. Albany (N. Y.) Medical College, 1846, surgeon of the Ninety-first New York Volunteer Infantry in the Civil War, who retired from practice a year ago on account of ill health, died at his home in Ogdensburg, N. Y., November 14, aged 94.

James A. Bond, M.D. University of Louisville Medical Department, 1881, an eye and ear specialist of Kansas City, at one time surgeon of the Third Infantry, N. G. Mo., died at his farm in Craig, Mo., November 19, from tuberculosis, aged 48.

Charles H. Cockey, M.D. University of Maryland School of Medicine, 1867, for three years instructor in microscopy in that institution, died at his home in Baltimore, November 19.

George A. Beck, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1875, of Flemington, Pa., died recently and was buried at Jacksonville, Pa., November 17.

Orison B. Dames, M.D. Harvard University Medical School, Boston, 1866, assistant surgeon in the Navy during the Civil War, for many years a resident of Chicago, died at his home in Normal, Ill., November 18, from apoplexy, age 67.

Daniel Fordyce Randall, M.D. Vermont Medical College, Woodstock, for many years a practitioner of Chesterfield, N. H., died at the home of his daughter in North Hinsdale, November 7, from heart disease, aged 76.

Spencer J. Northrup, M.D., one of the pioneer physicians of Minnesota, was run over by a freight train, November 7, and died from his injuries at his home in Buffalo Lake, November 8, aged 62.

Richard H. Meserve, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1853, who retired from practice in Limerick, Maine, two years ago, died in Augusta, November 11, aged 85.

A. Frank Taylor, M.D. Cleveland Medical College, 1868, a member of the Broome County (N. Y.) Medical Society, died recently at his home in Castle Creek, and was buried November 13.

Lewis W. Sutherland, M.D. Albany N. Y.) Medical College, 1855, of Pittsburg, Pa., died at the South Side Hospital in that city, November 12, after an illness of nine months, aged 78.

John W. Thomas, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1858, died at his home in Charleston, S. C., and was buried November 12, aged 68.

Daniel P. Putnam, M.D. College of Physicians and Surgeons in the City of New York, 1850, died from cerebral hemorrhage at his home in Cleveland, Ohio, November 4, aged 82.

Plate M. White, M.D. Medical College of Ohio, Cincinnati, 1882, shot himself through the heart while despondent, at his home in Los Angeles, November 10, aged 45.

C. T. Taggert, M.D. Central College of Physicians and Surgeons, Indianapolis, 1886, once member of the state legislature, died recently at his home in Sullivan, Ill.

W. E. McCord, M.D. Kentucky, 1894, died at his home near Crafton, Ky., November 17, from intestinal obstruction, after an illness of one week, aged 67.

Corbin F. Hargis, M.D. University of Maryland School of Medicine, Baltimore, 1890, of Pocomoke City, Md., died at Baltimore, November 18, aged 43.

Daniel F. Burton, M.D. Rush Medical College, Chicago, 1878, died at his home in Galesburg, Ill., November 17, from peritonitis, after a short illness.

George W. Lampton, M.D. Indiana, 1897, died at his home in Jeffersonville, Ind., November 19, from consumption after a lingering illness, aged 67.

J. P. Willett, M.D. Medical College of Ohio, Cincinnati, 1883, died November 15 from an accidental gunshot wound at his home in Webb City, Mo.

George Dallas Streeter, M.D. Pennsylvania, 1872, died suddenly at his home in Waco, Texas, November 18, from heart disease, aged 60.

J. R. Porter, M.D., a prominent physician of Jones County, Mississippi, died at his home in Moselle after a short illness, November 19.

Harvey H. Stamper, M.D. Kentucky School of Medicine, Louisville, 1892, died recently at his home in Campton, Ky., aged 34.

Richard K. Paine, M.D. Illinois, 1873, died suddenly at his home in Manitowoc, Wis., November 14, from heart disease, aged 63.

John S. Boyd, M.D. Ohio, 1874, died at his home in New Brighton, Pa., November 19, from tubercular peritonitis, aged 50.

Charles H. Craddock, M.D. Kentucky School of Medicine, Louisville, 1894, died at his home in McLoud, Okla., November 16.

William W. Newburn, M.D. Memphis (Tenn.) Medical College, 1860, died at his home in Memphis, November 18, aged 65.

John S. Petrie, M.D. Louisville Medical College, 1858, died suddenly at his home in Bardwell, Ky., November 9, aged 72.

Stephen W. Moore, M.D. Illinois, 1873, died at his home in Marion, Ind., November 14, after a short illness, aged 71.

John Bunn, M.D. Starling Medical College, Columbus, Ohio, died recently at his home in Batavia, Ohio, aged 68.

Henry Moore Humphrey, M.D. Philadelphia, died at his home in Dresden, Germany, November 13, aged 83.

Samuel R. Thompson, M.D. Ohio, 1859, died at his home in Uhrichsville, Ohio, November 14, aged 75.

Jesse R. Jones, M.D. Ohio, 1856, died at his home in Jackson, Miss., November 24, aged 71.

Herr H. Weeds, M.D., died at his home in Granby, Mo., November 19, aged 104.

F. E. Marsh, M.D., died at his home in Quincy, Mich., November 12, aged 71.

D. C. Scarborough, M.D. Texas, died recently at Alba, Texas.

Death Abroad.

Herbert William Allingham, F.R.C.S.

The brilliant career of one of the best known of the younger surgeons of London has been cut short under tragic circumstances by his death at Marseilles, France, November 4. Herbert William Allingham was born in 1862, the eldest son of Mr. William Allingham, who was for many years the leading authority in England on diseases of the rectum and the author of the standard work on the subject. He passed the membership examination of the Royal College of Surgeons in 1883 and the fellowship examination in 1887, and in the same year was appointed surgeon to the Great Northern Central Hospital and demonstrator of anatomy in St. George's Hospital. Soon after he was appointed surgeon to St. Mark's Hospital for Fistula, the hospital at which his father had worked and made his reputation. In 1894 he became assistant surgeon to St. George's Hospital. He made the best use of his ample opportunities and soon acquired a great reputation not only as a specialist on diseases of the rectum, but as one of the best operators in general surgery in London. From an early age he assisted his father in his work and thus was armed with an experience and skill which many surgeons could not acquire until after years of hospital work. He edited the later editions of his father's work on "Diseases of the Rectum," wrote an excellent book on "Operative Surgery," and contributed an article on the diagnosis of diseases of the rectum to "Allbutt's System of Medicine." His reputation extended to the highest circles. In 1902 he was appointed surgeon-in-ordinary to the Prince of Wales and surgeon to the king's household. He was very kind and courteous and the services which he rendered to members of his profession in difficulties are remembered with gratitude by many. The death of his wife in last January, who had long been an invalid, was a severe blow to him. To add to this he had the misfortune about eighteen months ago to contract a chronic disease while operating on a patient. To this fact his friends attribute his inability to shake off the depression which followed his wife's death and his yielding to the strain.

The Public Service.

Army Changes.

Memorandum of changes of station and duties of medical officers, U. S. Army, week ending Nov. 26, 1904:

Sweazey, Verge E., asst.-surgeon, granted two months' leave of absence.

Borden, Wm. C., McCaw, Walter D., surgeons, and Darnall, Carl R., asst.-surgeon, appointed members of a board of officers to meet at Army Medical Museum Building, Washington, D. C., Nov. 29, 1904, for the examination of such officers of the Medical Department as may be ordered before it to determine their fitness for promotion.

Cox, Walter, and Marrow, Chas. E., asst.-surgeons, ordered to Army Medical Museum Building, Washington, D. C., for examination for promotion.

Johnson, R. W., surgeon, granted leave of absence for two months.

Barron, Noel I., asst.-surgeon, died at Iloilo, P. I., Oct. 20, 1904.

Maus, Louis M., deputy surgeon general, leave further extended twenty days.

Mearns, E. A., surgeon, granted thirty days' sick leave with permission to apply for thirty days' extension.

Ashford, B. K., asst.-surgeon, granted thirty days' leave of absence about Dec. 20, 1904.

Davis, Oscar F., contract surgeon, returned to duty at Fort De Soto, Fla., November 13 from leave of absence.

Van Kirk, Harry H., contract surgeon, returned to duty at Fort Sill, Okla., November 18 from leave of absence.

Lemmon, Robert, contract surgeon, ordered from Fort McKinley, Me., to Fort Du Pont, Del., for temporary duty.

Pinkston, Omar W., contract surgeon, left Madison Barracks, N. Y., November 17, on leave of absence for two months.

Cooke, Robert P., contract surgeon, granted leave of absence for twenty days.

Rietz, Hugo C., contract dental surgeon, granted leave of absence for one month.

Merrick, John N., contract surgeon, left Fort Missoula, Mont., November 16 on leave of absence for two months.

Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending Nov. 26, 1904:

Lando, M. E., asst.-surgeon, ordered to the Naval Hospital, Mare Island, Cal.

Wise, C. K., A. A. surgeon, ordered to the Naval Hospital, Norfolk, Va.

Nelson, H. T., Jr., asst.-surgeon, appointed asst.-surgeon, with rank of lieutenant (junior grade) from Nov. 14, 1904.

Berryhill, T. A., surgeon, detached from the *Baltimore*, and ordered to the *Oregon*.

Diehl, C., surgeon, detached from the *New Orleans* and ordered to the *Baltimore*.

Crandall, R. P., surgeon, detached from the *Oregon* and ordered to the *New Orleans*.

Nelson, H. T., Jr., asst.-surgeon, ordered to the Naval Hospital, Washington, D. C.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the six days ending Nov. 22, 1904:

Carmichael, D. A., surgeon, Bureau letter of Sept. 21, 1904, granting leave of absence for one month from Oct. 15, 1904, amended so that said leave shall be for 28 days only.

White J. H., surgeon, granted leave of absence for eight days from November 20.

Greene, J. B., P. A. surgeon, granted leave of absence for four days from Nov. 11, 1904, under Paragraph 191 of the Regulations.

Lumsden, L. L., P. A. surgeon, granted leave of absence for one month and ten days from November 20.

Goldberger, Joseph, P. A. surgeon, granted leave of absence for five days from Nov. 10, 1904, under Paragraph 191 of the Regulations.

Amesse, J. W., asst.-surgeon, granted leave of absence for fourteen days from Jan. 2, 1905.

Ebersole, R. E., asst.-surgeon, granted leave of absence for fifteen days.

Duke, R. F., A. A. surgeon, granted leave of absence for twenty-five days from November 15.

Frick, John, A. A. surgeon, granted leave of absence for thirty days from December 1.

Friesell, C. M., A. A. surgeon, granted leave of absence for fifteen days from November 9.

Goldsborough, B. W., A. A. surgeon, granted leave of absence for three days from November 28.

Hume, Lee, A. A. surgeon, granted leave of absence for thirty days from November 7.

Kimmel, W. A., A. A. surgeon, granted leave of absence for fifteen days from November 16.

Sibree, H. C., A. A. surgeon, granted leave of absence for seven days from November 18.

Townsend, W., A. A. surgeon, granted leave of absence for thirty days from December 15.

Miller, Charles, pharmacist, Department letter of Nov. 7, 1904, granting leave of absence for fourteen days from Nov. 10, 1904, amended to read fourteen days from November 15.

Hanrath, F. R., pharmacist, to report to medical officer in command at Cleveland, Ohio, for temporary duty and assignment to quarters.

Southard, F. A., pharmacist, granted leave of absence for twenty-six days from November 20.

Public Health.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the period from Nov. 19 to Nov. 25, 1904:

SMALLPOX—UNITED STATES.

California: Los Angeles, Nov. 6-12, 1 case.
Illinois: Nov. 13-19, Chicago, 21 cases, 2 deaths; Danville, 1 case; Springfield, 1 case imported from East St. Louis, Ill.
Louisiana: New Orleans, Nov. 9-19, 4 cases.
Michigan: At 48 places, Nov. 12-19, present.
Missouri: St. Louis, Nov. 13-19, 10 cases.
New York: New York City, Nov. 13-19, 4 cases.
Ohio: Toledo, Nov. 13-19, 1 case.
Pennsylvania: Philadelphia, Nov. 13-19, 2 cases.
South Carolina: Georgetown, Nov. 14, 2 cases; Greenville, Nov. 13-19, 2 cases.
South Dakota: Sioux Falls, Nov. 13-19, 2 cases.
Washington: Tacoma, Nov. 6-12, 2 cases.
Wisconsin: Milwaukee, Nov. 6-19, 42 cases.

SMALLPOX—FOREIGN.

Brazil: Bahia, Oct. 15-29, 43 cases, 2 deaths; Rio de Janeiro, Oct. 9-23, 578 cases, 183 deaths.
China: Chefoo, Oct. 8-15, 1 case; Shanghai, Oct. 15, 3 deaths.
France: Paris, Oct. 30-Nov. 5, 12 cases.
Great Britain: Oct. 30-Nov. 5, Bristol, 7 cases; Manchester, 1 case; Newcastle-on-Tyne, 5 cases; Nottingham, 2 cases.
Italy: Palermo, Oct. 30-Nov. 5, 16 cases, 2 deaths.
Netherlands: Rotterdam, Oct. 30-Nov. 5, 1 case.
Philippine Islands: Manila, Sept. 18-24, 2 cases, 2 deaths.
Spain: Barcelona, Oct. 21-31, 15 deaths.

YELLOW FEVER.

Brazil: Para, Sept. 1-Oct. 20, 16 deaths; Rio de Janeiro, Oct. 9-23, 2 cases.
Ecuador: Guayaquil, Oct. 26, 1 death.
Mexico: Nov. 6-12, Merida, 1 case; Texistepec, 21 cases, 4 deaths.
Panama: Colon, Nov. 7, 1 case from Panama.

CHOLERA.

Egypt: Suez, Nov. 4, 2 cases from Br. S. S. *Coulodon* from Java.
India: Calcutta, Oct. 8-22, 22 deaths.
Russian Empire: Baku, Oct. 11-18, 60 cases, 24 deaths; Merv, Oct. 1-7, 1 case.

PLAGUE.

Africa: Cape Colony, Port Elizabeth, Oct. 13-19, 1 case.
Brazil: Bahia, Oct. 15-Nov. 4, 18 deaths; Rio de Janeiro, Oct. 9-23, 72 cases, 25 deaths.
Chile: Iquique, Oct. 1-15, present.
India: Bombay, Oct. 19-25, 63 deaths; Calcutta, Oct. 8-22, 5 deaths; Karachi, Oct. 17-23, 9 cases, 8 deaths.
Peru: Callao, Oct. 1-15, 8 cases; Lima, Oct. 1-15, 5 cases.
Straits Settlements: Singapore, Oct. 26-Nov. 8, 1 case, 1 death.

Medical Organization.

SPECIAL WORK IN WISCONSIN.

By J. N. McCormack, M.D.

CHAIRMAN OF THE COMMITTEE ON ORGANIZATION.

The itinerary arranged for me in this state was even more extensive than the one heretofore reported in THE JOURNAL for Indiana. Dr. Sheldon is nearly a model of what the secretary of a state association should be, and, having ample notice of my intention to visit his state for detailed work, with the advantage of the experience gained by the Indiana Council in similar efforts, and the assistance of their circular letters and programs, he was soon able to put the entire machinery of his new organization in operation to secure a full attendance at the meeting in each councilor district.

Dr. Sheldon made the Indiana circulars and programs and his own suggestions into a kind of "Round Robin," and, beginning with the district in which the first meeting was to be held, had them sent from councilor to councilor until all had had the benefit of the information thus easily furnished. The success of this plan was soon made evident in both the attendance and interest.

Beginning at La Crosse, November 3, in a little less than three weeks I visited Eau Claire, Superior, Ashland, Wausau, Marinette, Oshkosh, Sheboygan, Milwaukee, Burlington and Madison, holding a meeting in each district except the one in the extreme southwestern part of the state and two in the Superior district.

Wisconsin is new in this work, having reorganized and adopted the county society plan only eighteen months ago, but the progress made in that time is remarkable. Many of the counties in the lumber regions in the central and northern sections are very sparsely settled, making it necessary for the present, at least, to organize two or more counties together, but nearly every county is embraced in some local organization and over two-thirds of the entire profession of the state have been brought into the membership.

While in none of these counties were the societies up to the standard of two or three of the best in Indiana in their practical work and in the results secured, considering their age, and especially in view of the enthusiasm aroused by these district meetings, the outlook is most promising. The younger element abounds here and dominates the profession to a degree not observed elsewhere, although this condition of affairs should have been expected in a new country. The districts were usually so large that only a representative attendance was possible from some of the counties, but these promise to begin work on the lines laid down by the Association as soon as they returned home to make each county society a vital, practical force for the scientific, social, moral and financial benefit of every physician and citizen within its jurisdiction.

In this state, as in many others I have visited, the most serious obstacle to real organization lies in the absence of any practical co-operation or even understanding between the state societies and the state licensing board, and between the county societies and the county boards of health. Even where there are sectarian boards, or sectarian representatives on one board, the difficulties of such co-operation are being constantly minimized as the work of organization progresses and will soon be entirely removed by complete frankness and fair dealing on all sides. This would all have been made easier if we had provided for a representative from all such boards in the House of Delegates in each state association, as I believe should be done.

The hospitality of the physicians of Wisconsin was only limited by time and opportunity. The only complaint which could be made was that the refreshments and social entertainments were often so elaborate as to consume time needed for the practical. Altogether the experience there was pleasant, profitable and an inspiration for even better work on my part in the future.

Society Proceedings.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Portland, Ore., July 11-14, 1905.

Southern Surgical and Gynecological Association, Birmingham, Ala., December 13-15.

Western Surgical and Gynecological Association, Milwaukee, Wis., December 28 29.

American Public Health Association, Havana, Cuba, Jan. 9-13, 1905.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held Nov. 2, 1904.

Dr. Harold N. Moyer in the Chair.

Stenosis of the Lower Portion of the Esophagus.

DR. B. W. SIPPY presented a man who, five or six weeks ago, began to have difficulty in swallowing. During the act of swallowing he feels great discomfort below the lower portion of the sternum, which is more pronounced in swallowing liquids than solids. The onset of the trouble was rather sudden. Some days the difficulty in swallowing is greater, and on these days food is regurgitated without any effort at vomiting. The food does not taste sour, but is regurgitated in practically the same condition as when swallowed. Dr. Sippy said that when a patient presents himself with pain in the lower portion of the sternum on eating, and when food regurgitates, or even before the symptom of regurgitation is present, esophageal stenosis should be suspected. Many things produce pain on eating, among them obstruction of the esophagus, ulcer of the cardiac end of the stomach, carcinoma of the cardiac end of the stomach, perigastric inflammation, either acute or chronic, perigastric adhesions and epigastric swelling. Dr. Sippy introduced an esophageal bougie of large size, and located the obstruction in the esophagus at about 40 centimeters from the incisor teeth, the obstruction being near the cardia. A diagnosis of esophageal stenosis at its lower portion was made. After considering at length the differential diagnosis, he said it is advisable to place the esophagus as nearly at rest as possible. Foods should be given which are mushy in character, neither too hot nor too cold, and which will pass readily without causing irritation.

He said that Mikulicz fed a patient through the gastrostomy wound for five years, and still the spasm continued. He subsequently cut down through the gastrostomy wound and forcibly stretched the cardiac orifice, producing a submucous rupture of the fibers, and the patient has had no trouble since. He has operated on three other cases since, with good results. Dr. Sippy said that cases which are recognized early may be so managed that the process does not continue. Spasmodic esophageal stricture may continue for a period of a few months, then followed by spontaneous recovery. Once dilatation occurs, it is very improbable that a patient ever recovers, and sooner or later there comes a time when there is so much spasm that the patient can no longer obtain a sufficient quantity of food for nourishment. Some patients die in two or three years, while others live many years, but it is a serious condition after dilatation is once present. Dr. Sippy passed the esophagoscope (after thorough cocainization of the esophagus), so that the members of the society could see the point of constriction. He said that in this case a bougie would be passed day by day; the patient would be given food that was non-irritating; between 30 and 40 grains of bromid of sodium would be given every four hours, and the patient's body would be given as much rest as possible. With this line of treatment he hoped to succeed finally in overcoming the spasm, as there was no ulceration, no erosion, and no sacculation in this case.

DISCUSSION.

DR. NORMAN BRIDGE stated that Dr. E. Fletcher Ingals once found the cardiac extremity of an esophagus absolutely open. Dr. Bridge has no doubt that this was due to some pathologic state. He urged the utmost care and caution in passing esophageal bougies, as he has known of some instances where great violence was done by exerting too much force in introducing bougies into and against the spasm of the cardiac end of the esophagus. He related the case of a woman who had a spasm of the esophagus, which was extremely unyielding at times, so that it made swallowing of food difficult, yet at other times it would relax so that she could swallow without the slightest difficulty.

DR. NORVAL H. PIERCE has used the esophagoscope in the diagnosis of tumors and in extracting foreign bodies. He thinks the instrument has a rather limited, though well-defined, sphere. In diagnosis it is extremely important, and for the purpose of removing foreign bodies it stands preeminent to all other measures.

DR. SIPPY said that until recently spasm of the esophagus, producing dilatation, was seldom diagnosed. Probably not more than 75 or 80 cases are reported in the literature up to the present time. The condition, however, is relatively common, but is overlooked. Within the last eight months he has seen 7 cases of idiopathic dilatation of the esophagus with cardiaspasm. He has previously reported 3 cases. Physicians must diagnose this condition of the esophagus early to prevent the serious results which will certainly follow if dilatation once takes place.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Nov. 3, 1904.

Dr. Andrew H. Smith in the Chair.

The Present Status in the Investigations of the Subject of Internal Secretions.

DR. WILLIAM H. THOMSON made this the subject of the Anniversary Discourse. He said that laboratory reports have shown us how ignorant we are in regard to certain pathologic and physiologic processes. The mechanism of secretion has always been more or less obscure. There is no common agreement regarding the urinary secretion nor even regarding a single element in the urine. It is still a question what the kidney has to do with urea, for when three-quarters of the kidney have been removed from healthy dogs, the remaining one-quarter has secreted more urea than a sound and whole kidney until the animal died from a general breakdown of the proteid tissues into urea. He said that uremia is not due to the suppression of the functions of the kidney, because one could have an impacted calculus, with complete suppression of urine, without developing uremia. The secretions, no matter in what amounts nor how easily procured, have but little to tell of the vital processes to which they owe their origin. He reviewed the functions of different glands in the light of recent research. The spleen must be an important organ, as it is present in all vertebrates, yet it has been proved that all animals can get along without the spleen, and its extracts show no special properties. The thymus gland seems to be in some way associated with the origin of white blood corpuscles, and, as the lymphatic tissues increase, this body becomes superfluous. The autopsies on 18 cases of marasmus that have been reported show that the only lesion found was that of atrophy of the thymus. Dr. Thomson concluded that atrophy of the thymus is always found in cases of infantile atrophy and that the condition of the thymus is an index to the general nutrition. The general increase of lymphatic tissue throughout the body, accompanied by enlargement of the thymus, is best treated by cod-liver oil. In regard to the thyroid gland, he said that myxedema has been artificially produced, and is unmistakably the result of atrophy of the gland itself. The administration of thyroid extract holds myxedema in abeyance, and the elements that this gland adds to the blood are very important. The question as to whether this gland is necessary to life has received various answers, but more recently it has been held that certain small bodies, called parathyroids, which are closely associated with the thyroid, and in some animals imbedded in the gland itself, while they can not compensate for the thyroid if this latter is removed, yet if the parathyroids are removed the animals experimented on are taken with tremors, convulsions, etc.; no such condi-

tions result if the thyroid is removed and the parathyroids left. He thought that some internal secretion may have antitoxic functions by which poisons in the body are neutralized. It is claimed that Graves' disease is accompanied by hypertrophy of the thyroid and this charges the blood with an excess of its own secretion. In all cases of Graves' disease, he has found the parathyroids smaller than normal. He has concluded that the thyroid is not primarily the seat of Graves' disease, but is only a secondary involvement, much as the spleen is involved in ague. He maintains that the treatment of this disease by diet and gastrointestinal attention gives better results than symptomatic or surgical procedures. He believes that the internal secretion of the thyroid is intimately related to the nutrition of connective tissue. Thyroid extract has been prescribed for almost every condition, but its real value is still undetermined. The fact that so small a body as the pituitary gland should interfere with nutritive changes, as in acromegaly, seems strange. One can not but concur, however, with the opinion that disease of this body is a common accompaniment of acromegaly. He believes that the normal growth of the body represents the sum of the interaction of the growth of different organs of the body. In acromegaly a general derangement of the processes of nutrition may include the functions of one or more of the ductless glands. He said that there is no doubt that the pancreas has much to do with the origin of diabetes; if the whole gland is excised, diabetes will develop in its most severe form. The extent of the influence of the islands of Langerhans on the development of diabetes is not clearly known. Diabetes is not dependent on the quantity of secretion, for if one-quarter or one-fifth of the pancreas is left in the body no diabetes occurs. Addison's disease is caused by disease of the adrenals. The chief property of adrenalin seems to be to cause arterial contraction. A not improbable surmise is that the high tension of the pulse in many forms of kidney disease is due to the action and excess of adrenalin in the blood. The inference is that a high tension pulse goes with a contracted kidney; if this action is exerted by some agent in the blood, the administration of some vasodilator should be followed by increased urinary secretion. He considers it very important that the adrenals should be carefully examined in every case of kidney disease.

Travel Notes.

XVIII.

BENGAL MEDICAL COLLEGE AND CALCUTTA GOVERNMENT GENERAL HOSPITAL.

NICHOLAS SENN, M.D.
CHICAGO.

PORT SAID, EGYPT, Sept. 26, 1904.

The medical interests of Calcutta, a city of great commercial importance, with nearly a million of inhabitants, center in the Bengal Medical College and the Government General Hospital; its clinical department, college and hospital are located on the same spacious grounds, artistically laid out, intersected by well-made and well-kept walks and ornamented with trees, shrubbery and flowers. (Fig. 1.) Both institutions are managed by officers of the Indian Medical Service, who constitute the faculty of the college and attending staff of the hospital, thus cementing together the didactic and clinical teaching and uniting them practically under one administration, and securing uniformity in the methods of teaching and a systematic progression of the courses from term to term and year to year.

BENGAL MEDICAL COLLEGE.

The Bengal Medical College was founded in 1830, and from a small beginning has gradually developed into a great medical school with an attendance at the present time of about 600 students. The original structure is an imposing, massive stone building with graceful fluted columns and broad stone steps on the side of entrance. The college, as well as the hospital which in reality forms an integral part of it, had to be enlarged from time to time in order to accommodate the rapidly increasing number of students. The requirements for admission and graduation correspond with those of the other medical colleges of India. Separate laboratory buildings have been erected, well adapted for the purposes for which they are intended and fairly well equipped. The medical classes are very much mixed, not only in nationality and color, but also in the different aims pursued by the students. Thus there are "regular" and "casual" students; the former continue their studies for five years with a view of passing the final examinations for the L.M.S. or M.B. degree; the latter are permitted to take a partial course of lectures or any department of hospital

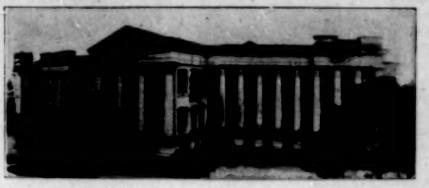

Fig. 1.—Bengal Medical College, Calcutta.

practice, with the permission of the principal of the school and the professor, on payment of the fees in advance at the fixed rates.

Then there are special provisions made for female medical students and military pupils. Admission to the female certificate course is granted by the principal, provided the student has passed the preliminary arts examination. Admission to the military pupil course is regulated by the director-general of the Indian Medical Service. I am particularly anxious to define in connection with the Bengal Medical College the status of female medical students in the medical colleges of India. Female students may enter a, As regular students for the

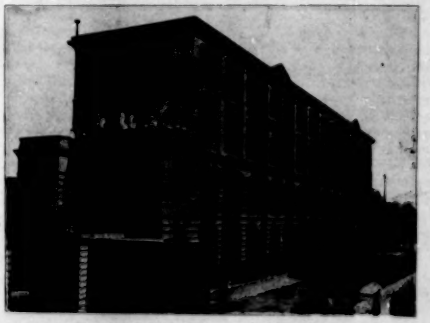

Fig. 2.—Quarters for military pupils.

university course; b, as female certificate students; c, as casual students. The preliminary arts examination required before entering is: a, The F.A., Calcutta, or its equivalent; b, the entrance, or its equivalent; c, the entrance, or its equivalent. A student who has entered for the university course may be permitted by the principal to change her plans of studies at any stage, and to join the certificate class instead. Female students entering as regular or female certificate students are eligible for a government scholarship, 20 rupees per month, and are not charged any fees.

FEMALE CERTIFICATE CLASS.

Admission to this class is granted by the principal. The

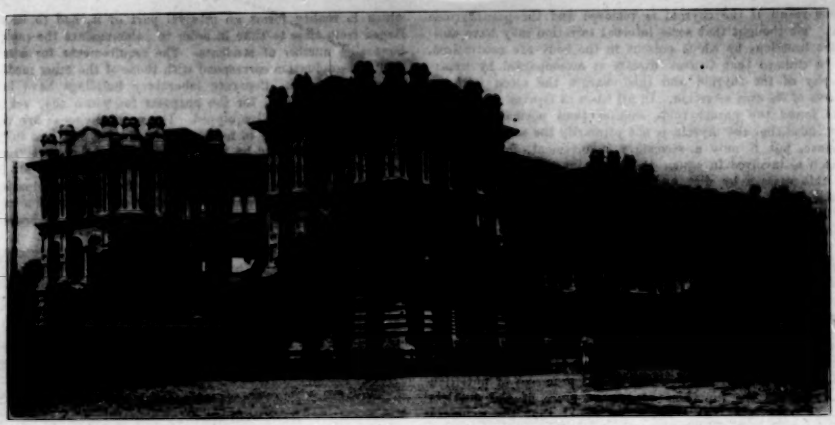

Fig. 3.—Eden Hospital, Calcutta.

Fig. 4.—Elephantiasis of legs. By courtesy of Capt. Rogers, I. M. S.

number of admissions is determined by him. Students of this class must be over 17 years of age before commencing their studies. They must have passed a preliminary arts examination before admission to the college, viz., 1, entrance examination of the Calcutta university or an equivalent; 2, a preliminary arts examination recognized by the British general medical council.

THE SURNOMOYE HOSTEL.

All female students are expected to reside in the hostel, located in the college grounds, and only under exceptional circumstances will they be allowed to live with friends or guardians outside the college. Applications may, therefore, have to be refused on the ground that there is no accommodation in the hostel. Under the rules of the hostel preference is given to native students. While in the hostel students are under the supervision of the lady superintendent and must conform to

Fig. 5.—An undiagnosed case. By courtesy of Capt. Rogers, I. M. S.

the rules laid down for their guidance. While within the college precincts students are under the disciplinary control of the principal.

MILITARY PUPIL CLASS.

The present attendance of Bengal Medical College includes 96 military pupils who, at government expense, are being edu-

cated for the subordinate Indian Medical Service. These students are in uniform and reside in a separate building across the street from the college (Fig. 2), and besides pursuing their routine studies are drilled daily by a retired captain of the Indian army, who at the same time exercises supervision over them and is responsible for their conduct outside of the college precincts. The following are the regulations for this class: 1. The administrative control of this class, as a portion of the Indian subordinate medical department, rests with the director-general of the Indian Medical Service. 2. Students are admitted to this class under the orders of the government of India, military department. 3. Students must be of European or Eurasian parentage, physically fit, of good character, and between 16 and 18 years of age on admission. 4. While at the college they will be styled military pupils. 5. Their education at the college is intended to fit them for employment in hospitals of British troops and in military and civil appointments. 6. The course of study is four years. 7. Military pupils must obtain permission from the principal before attending lectures on subjects outside their curriculum. 8. The periodical and final examinations of the curriculum will be conducted by the faculty, and students who fail to pass them will be dealt with in accordance with the rules laid down in the prospectus issued by the director-general of the Indian Medical Service. 9. At the end of the course military pupils, if reported qualified, will be attested and admitted into the Indian subordinate medical department. 10. At the same time they will receive a certificate qualifying them to practice physic in India and designate themselves diplomates of the Medical College of Bengal. 11. A military pupil who, at the end of his first year at the college, does not, in the opinion of the principal, give promise of proving a successful or desirable student, will be liable to removal. 12. A military pupil, in the event of failing to pass the periodical and final examinations of the curriculum, or misconducting himself, may be summarily removed by the director-general of the Indian Medical Service, and all certificates to which he may otherwise be entitled withheld. 13. A military pupil desirous of relinquishing his studies can only do so with the sanction of the director-general, and on refunding the whole amount of pay received by him. 14. A military pupil who, after completing the course, declines to be attested, will similarly refund the whole amount of pay received by him, and will not receive any certificates. 15. The order and discipline of the military pupils is maintained by the superintendent of military pupils and the resident staff, under orders of the principal. 16. While under instruction in the college or hospitals military pupils are subject to the rules for the maintenance of discipline applicable to other students. 17. Leave of absence to military pupils is granted by the principal. 18. No certificate of attendance on any course of lectures, or practical work, will be granted to a military pupil unless he has passed the entrance examinations of the Calcutta university, or its equivalent, before commencing the course, and has also paid the fees laid down for casual students.

Female medical students who enter the certificate class continue their studies for four years and are required to pass a satisfactory examination in the following branches:

First Year.—Descriptive and surgical anatomy, general anatomy and physiology, materia medica, elementary chemistry, dissection, practical pharmacy, followed by a test examination in anatomy, physiology, materia medica and chemistry.

Second Year.—Descriptive and surgical anatomy, general anatomy and physiology, materia medica, chemistry (full course), dissections (six postmortems), nine months' hospital practice, three months' out-patient practice, to be followed by a final examination in anatomy, physiology, materia medica, and chemistry.

Third Year.—Medicine and clinical medicine, surgery and clinical surgery, midwifery, medical jurisprudence, pathology, practical midwifery (three labors), ophthalmic medicine and surgery, six postmortems, nine months' hospital practice, three months' ophthalmic hospital practice, to be followed by final examination in pathology and medical jurisprudence.

Fourth Year.—Medicine and clinical medicine, surgery and clinical surgery, midwifery, practical midwifery (six cases of labor), three months' hospital practice, midwifery wards (six months), dental out-patient practice (three months), dental surgery (optional), to be followed by final examinations in medicine and surgery and midwifery.

It will be seen from the above that in the whole curriculum there is only one optional branch—dental surgery. The English teachers of medicine and surgery believe in the wisdom of making the attendance on all lectures and clinics obligatory, as it should be. Some of our best American medical colleges are making a serious mistake in giving the students too much liberty in the choice of their studies, the results of which must necessarily be a fragmentary and imperfect knowledge in some of the most important branches they are expected to master. Optional liberties in a medical college are as harmful as they would be if they were introduced into our primary schools. Students thus privileged will only learn enough of the branches that are distasteful to them to squeeze through the final examinations and no more. Optional studies are in place in postgraduate education, but should not be countenanced in a medical college whose function it is to instruct the students systematically and thoroughly in all branches pertaining to medicine and surgery.

The Bengal Medical College has undertaken the education of midwives, a very commendable extension of its wide field of usefulness.

MIDWIVES AND DAIS.

The regulations for this department are formulated under this heading.

Women who have a fair knowledge of English, but who have not passed the entrance examination or its equivalents, will be admitted into the Eden Hospital to learn midwifery. The government grants 20 rupees ($6.40) a month toward the board, washing, etc., of each pupil and gives them free quarters. After a year's tuition and bedside practice, if found proficient, they will obtain a certificate qualifying them to practice midwifery. The fee for each certificate is 5 rupees ($1.60). They are expected to do general nursing in the wards as well as midwifery. Women who have not passed the entrance examination or its equivalents, but who can read and write Bengali, can be admitted into the Eden Hospital as pupil dais. The government grants 6 rupees ($1.92) each month to eight pupils toward their board, washing, etc., and gives them free quarters. After twelve months' tuition and bedside practice, if found proficient, they will obtain a certificate qualifying them to practice midwifery. They are expected to do nursing in the wards as well as midwifery. The education of these two classes of midwives for country and village practice must meet a pressing need, as in many remote parts of India medical aid is too remote to be available in obstetrical cases. These women can be made also very useful to physicians and patients as nurses in grave cases of illness or accident.

Major F. J. Drury, I.M.S., is principal of the college, and Professor Bird occupies the chair of surgery.

CALCUTTA GOVERNMENT GENERAL HOSPITAL.

The Calcutta Government General Hospital is virtually the clinical part of the Bengal Medical College. The different pavilions and laboratories form a group of buildings of which any city and country might well be proud. The Eden Hospital (Fig. 3), a separate, new modern building, is the maternity in which about 600 women are delivered every year. The strictest cleanliness prevails throughout this building and sepsis in in-patients is almost unknown. The woman in labor is prepared with the same care as for a major operation, and everything brought in contact with her during the delivery and lying-in period is carefully disinfected (hands) and sterilized (dressings). The delivery room has all the aspects of an operating room. Three tables are always kept in readiness. Mother and child remain in the hospital from ten to fourteen days after delivery. The Ezra ward, with forty beds, the gift of a rich Jew, is for the exclusive use of Jews. The original hospital building is an old-fashioned two-story solid stone

building which in the light of modern improvements would appear somewhat antiquated if it were not for the electric lighting and electric punkah motor. The latter is kept in motion night and day during the hot season and is a source of immense comfort to the patients. The hospital can accommodate 450 patients and has a few private rooms for which a charge of 2 rupees (64 cents) a day is made. The operating room has a small amphitheater which affords standing room for the students, but lacks many of the conveniences and appliances considered at the present time so essential for aseptic surgical work. As in all hospitals in India, chloroform is the favorite anesthetic and the biniodid of mercury takes the first place as an antiseptic. Buried sutures have been abandoned almost entirely and the removable silk and silkworm-gut sutures are in general use. The nursing is in charge of two Anglican sisters, who are also at the head of a recently organized training school for female nurses, which has now an attendance of forty pupils. Male and female ward attendants assist the nurses in their work. The pupil nurses are Europeans or Eurasians and remain for only one year in training.

Among the more interesting cases Professor Bird showed me five patients recently operated on for abscess of the liver. All were doing well, although greatly emaciated from the effects of the disease. Abscess of the liver appears to be extremely common in this part of India, as Professor Bird not long ago operated on twenty cases in two months. Carcinoma in all its forms is met with here with about the same frequency as in Europe. Acute osteomyelitis and surgical tuberculosis, on the other hand, are comparativey rare. Syphilis and gonorrhœa are very common, but in the native both of these diseases pursue a benign course. Enlargement of the prostate gland in the aged natives is very rare. This statement is confirmed by all surgeons I met in India. They can offer no explanation for this, but there must be something in their habits or manner of living that protects them against this curse of advanced life so common among Europeans and Americans. Stone in the bladder is very common, but comparatively few of these cases enter the hospital, as they are operated on by physicians who practice in the country districts, the operation being regarded by them as a safe and easy one.

A chronic parenchymatous inflammation of the mammary gland in young men is of frequent occurrence here and is usually treated by excision. Cystitis is very rare as compared with our hospital experience. Two reasons might be advanced to explain this: the rarity of prostatic hypertrophy in India and the very mild course gonorrhœa pursues in the natives.

Professor Quicke of Bombay made the statement to me that he never knew of a rajah to enter on a catheter life. Tuberculosis of the kidney and bladder is also infinitely more rare in India than in our country. As is the case with all colored races, the natives of India are very subject to benign tumors, especially fibroma, keloid, lipoma, papilloma and cystoma. On the other hand, affections of the veins, hemorrhoids, varicocele and varicose veins of the lower extremities, are not nearly as frequent as with us. Among the thousands of bare-legged men I saw in India I did not observe a single instance of well-marked varicosity and, considering the enormous clinical material that passes through the large hospitals, the number of operations for hemorrhoids and varicocele is astonishingly small. Laxative vegetable diet, active exercise, absence of tendency to obesity and looseness or absence of dress will go far to explain the comparative freedom from ectatic disease of the hemorrhoidal, spermatic and saphenous veins, a suggestion which might be of some service to our numerous sufferers from plethora, obesity and stagnant venous circulation.

In the medical wards I found here, as in all hospitals in India, the greatest variety of malaria and its multitude of complications. A large part of the hospital space is occupied by malarial patients and the physicians here have an excellent opportunity throughout the entire year to study malaria in all its endless clinical and pathologic aspects.

What an excellent place Bombay or Calcutta would be for a great school for the study of tropical diseases! (Fig. 4.) The material is here, and not in London nor Liverpool, and if utilized to greatest advantage it must be studied here and not thousands of miles away from where the diseases had their origin.

Typhoid fever is not so common as we would suspect after an inspection of the water supply and insanitary environments of the masses of the natives. The native prefers to draw his water from the well that has served his ancestors for centuries rather than from the tap of the modern water-works. If it is at all within reach, water from the sacred Ganges is his favorite drink. Most of the cases of typhoid fever I examined in the different hospitals of India were of a mild type, and the mortality from this disease as published in the hospital reports is not great.

India has its share of pulmonary tuberculosis, but for reasons that can not be explained tuberculosis of bones and joints is very rare as compared with the frequency with which this disease attacks our childhood population. In any of our large hospitals we see ten cases of joint and bone tuberculosis to one in the hospitals of India, and on the streets of Chicago ten cripples from this disease to one in India. The same remarks apply to tuberculosis of the lymphatic glands and genitourinary organs. Diarrhœa, dysentery and malaria are the prevailing diseases of India and it is these affections that tax most heavily the therapeutic resources of the physicians, both in hospital and private practice. In this as well as in all clinical hospitals of India, much stress is placed on the practical training of the students, more especially by bedside instruction. The out-patient department is utilized to the greatest advantage and it is here that the students are given the very best opportunities to come in touch with the patients. Under the supervision and guidance of the professors or competent instructors, they are required to make thorough clinical examinations, apply dressings and assist in the operative work, and the last year students are privileged to perform some of the minor operations.

The average medical student in India has a keener taste for practical work than for scientific research, and consequently makes good use of his clinical opportunities. The female medical students are no exception to this rule, although it is generally admitted that at the end of the curriculum, in consequence of a more diligent attendance on the didactic lectures and a more liberal use of midnight oil in reading their text-books, they are ahead of their male colleagues in the theoretical knowledge of medicine. The male medical students are very fond of all kinds of athletic sports, and the time spent by them in developing their physical strength is made use of by the women in committing to memory the contents of their text-books. Then, too, the young men spend more time in amusements when away from the playgrounds and out of the hospital and lecture-rooms than the young women, who have less desire in this direction and are kept under stricter supervision.

If I had any criticism to offer in the methods of teaching clinical surgery in India I would say that the clinical material and specimens obtained by operations and postmortems are not made use of to the greatest advantage for the benefit of the students. Pathology should be made the most important feature in the teaching of surgery as well as of medicine. In defense of this apparent neglect it must be said that the clinical teachers in some of the colleges are without the necessary appliances and equipments to give surgical pathology the prominence it so well deserves (Fig. 5).

It was in the pathologic laboratory of the Bengal Medical College that I was given an opportunity to examine a new parasite, the *Piroplasma donovani*, through the courtesy of the director of the laboratory, Capt. Seward Rogers, I.M.S. He was also kind enough to furnish me with several mounted slides containing this parasite so recently discovered by Leishman and Donovan. In another place I will give a more detailed account of this parasite, history of its discovery and etiologic relationship to splenic anemia. Medical science is much indebted to the researches of the members of this corps, many of whom are indefatigable workers in a climate well calculated to undermine physical strength and paralyze mental activity.

Therapeutics.

[Our readers are invited to send favorite prescriptions or outlines of treatment, such as have been tried and found useful, for publication in these columns. The writer's name must be attached, but it will be published or omitted as he may prefer. It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns without allusion to inquirer.]

Tinea Tonsurans.

The following outline of treatment is recommended by Gaucher in *Med. Press* in treatment of tinea tonsurans occurring in children: The hair should be cut as closely as possible once a week; massage to the scalp twice daily is recommended, giving special attention to the diseased spots. After the massage the following should be applied by means of a tooth brush, with friction:

B.	Olei ricini	℥i	4
	Tinct. cantharidis	℥i	4
	Spiritus camphoræ	℥iv	120

M. Sig.: To be applied locally once a day.

In adults it is not necessary to cut the hair. The scalp should be washed once a week with tar soap and frequent massage applied by the patient. As a local application the following is recommended:

B.	Spiritus odoratus (Eau de cologne)	℥iss	45
	Spiritus lavendulæ	℥iss	45
	Tinct. capsici	℥i	4

M. Sig.: To be well applied locally once a day.

The following ointment may be substituted for the foregoing liquid preparation:

B.	Balsami Peruviani	℥ss	15
	Acidi salicylici	gr. xx	1 30
	Resorcini	gr. xx	1 30
	Liq. petrolati	℥iii	90

M. Fiat linimentum. Sig.: To be applied locally at night.

At the same time the patient may be instructed to rub the scalp every morning with the following stimulating mixture:

B.	Essentiæ terebinthinæ	℥ss	15
	Spiritus camphoræ	℥iii	90
	Liq. ammoniæ	℥i	4

M. Sig.: Apply locally in the morning.

In the case of a woman the following combination is recommended by the author:

B.	Hydrarg. chloridi corros.	gr. iv	25
	Acidi acetici glacialis	gtt. xx	1 30
	Resorcini	℥ss	2
	Chloralis hydratis	℥i	4
	Tinct. cantharidis	℥i	4
	Tinct. jaborandi	℥i	4
	Spiritus rect.	℥vii	210
	Olei ricini	℥i	30

M. Sig.: To be applied locally once daily.

Lumbago.

The following combinations are recommended by *Med. Press* in the treatment of lumbago:

B.	Antipyrini	℥i	4
	Sodii salicylatis	℥i	4
	Aquæ	℥ii	60

M. Sig.: One teaspoonful four times daily.

The local treatment is important. As a liniment the following is recommended:

B.	Methyl salicylatis	℥ii	8
	Tinct. belladonnæ	℥ii	8
	Tinct. opii	℥ii	8
	Spiritus camphoræ	℥iv	120

M. Fiat linimentum. Sig.: Apply locally twice daily with light massage.

Yeo recommends the following local application:

B.	Spiritus chloroformi		
	Olei olivæ, āā	℥ii	60

M. Sig.: To be rubbed thoroughly over the affected areas.

Or:

B.	Liquoris ammoniæ		
	Olei terebinthinæ, āā	℥ss	15
	Olei olivæ	℥i	30
	Olei limonis	℥ss	2

M. Fiat linimentum. Sig.: Apply locally.

Or:

B.	Olei cajuputi		
	Tinct. opii, āā	℥ii	8
	Olei terebinthinæ	℥ss	15

M. Fiat linimentum. Sig.: To be applied locally with thorough friction.

Aconite in combination with opium is of value in relieving the pains of muscular or joint rheumatism. The following combination is recommended:

B.	Tinct. aconiti	℥ii	8
	Olei terebinthinæ	℥i-℥ii	30-60
	Tinct. opii	℥i	30
	Linimenti saponis q. s. ad	℥vi	180

M. Fiat linimentum. Sig.: To be used locally three times a day.

Internally the following combination is recommended by Yeo in the treatment of chronic muscular rheumatism:

B.	Pulv. resinæ guaiaci	℥i	4
	Potassii iodidi	℥i	4
	Tinct. colchici sem.	℥iii	12
	Syrupi simplicis	℥ii	60
	Aquæ cinnamomi q. s. ad	℥vi	180

M. Fiat mistura. Sig.: A dessertspoonful to a tablespoonful twice daily.

Pruritus Ani.

Pruritus, according to Mr. Malcolm Morris in *British Med. Journal*, is more often a symptom than a disease. As an etiologic factor, gout ranks first as a cause of pruritus ani. Certain articles of diet, such as shell fish and strawberries, are apt to cause it. Other general causes are tobacco, rheumatism, albuminuria and diabetes. Locally, hemorrhoids, constipation, fissure, fistula, foreign bodies, worms, parasites, especially pediculi, growths, irritating discharges and diseases of the sweat glands, all are etiologic factors. It may be a reflex symptom, pointing to disease of the urethra, uterus, bladder, tumors, etc.

In the treatment of pruritus ani, therefore, the cause should be ascertained if possible, and removed. Any disorder of the liver, stomach, intestines and genitourinary tract should be properly treated.

A bland, nutritious diet should be recommended and constipation corrected. Condiments, rich sauces, highly seasoned foods and game should be forbidden. Abstinence from alcohol should be insisted on or it should be used very moderately. Coffee should also be prescribed in very limited quantities.

Autointoxication must be prevented by antisepsis. Small doses of calomel are particularly useful, given at night and followed by a saline the following morning. Ichthyol, five grains (.30) taken on an empty stomach in the morning and late at night is of value. Salol should also be given as an antiseptic. As a laxative aloes is contraindicated because of its irritating action on the rectum. If the appetite is poor and nutrition failing, tonics are indicated. Quinin, arsenic and nux vomica may be given under proper circumstances. Opium should not be given, as it has a tendency to produce itching.

If the pruritus is so severe as to disturb the sleep, succus conii, one dram (4.00), given three times a day, is of value. The bromids with sulphonal or chloral may be cautiously allowed. Thorough flushing of the system with large quantities of weak alkaline waters is often a potent aid in treatment. For this purpose the author recommends a course at certain mineral springs. Scrupulous cleanliness must be observed. The use of paper in the ordinary way is quite insufficient to clear the small portions of fecal matter. And, according to Adler, the use of harsh paper, especially when printed on, is a cause of pruritus. Pledgets of cotton serve the purpose better, moistened in warm water. The application of water as hot as can be borne is recommended by the author as one of the most efficacious measures. Oatmeal, bran, borax or sodium bicarbonate may be added to the water with advantage. In persons who sweat profusely carbolic acid lotion (1 to 60), a

saturated solution of boric acid or permanganate of potassium lotion should be used. After bathing, a soothing or cooling remedy should be applied.

Local remedies for pruritus ani may be classified as anodyne, antiseptic and caustic.

Cocain ranks first as an anodyne. It should be applied in the form of a suppository containing one-half a grain (.03) of the substance, or an ointment (4 per cent.) with boric acid ointment as a base. The patient should not be allowed to use it long at one time. Menthol may be used combined with cocain or alone in a solution as follows:

B. Mentholi	gr. x	65
Alcoholis	ʒi	30

M. Sig.: To be applied locally.

Sodium bisulphate frequently applied in the form of a poultice in most instances gives relief. Carbolic acid is especially good in many cases, applied in solutions one grain to six (.06 to .40) to the ounce (30.) of water, or in the form of a liniment (1 to 19) of olive oil. Or it may be combined with cocain or mercury in the form of an ointment. The following formulæ are recommended by the author:

B. Acidi carbolici	m. xx	30
Cocainæ hydrochlor.	gr. x	65
Liq. petrolati	ʒi	30

M. Fiat unguentum. Sig.: Apply locally after cleansing the parts well.

Or:

R. Acidi carbolici	ʒss	2
Cocainæ	ʒss	2
Aq. laurocerasi	ʒi	30
Aq. rosæ	ʒiii	90

M. Fiat unguentum. Sig.: Apply locally.

Or:

B. Acidi carbolici	ʒss	2
Hydrarg. perchlor.	gr. ii	12
Olei olivæ	ʒii	8
Ung. zinci oxidi benzoatis q. s. ad	ʒi	30

M. Fiat unguentum. Sig.: Apply locally.

The author also recommends the tar preparations in the treatment of pruritus ani as follows:

B. Lotio picis carbonis	ʒii	8
Lotio calaminæ	ʒviii	240

M. Sig.: Fiat lotio. Sig.: Locally as a wash.

Tar combined with bismuth may also be applied in the form of an ointment as follows:

B. Ung. picis liquidæ	ʒi	4
Bismuthi subnit.	gr. xx	1 30
Adipis q. s. ad	ʒi	30

M. Fiat unguentum. Sig.: To be applied locally.

Compresses soaked in oil of cade or Peruvian balsam in liquid petroleum are of value.

Silver nitrate is also recommended where other combinations fail, applied as follows:

B. Argenti nitratis	gr. iii	20
Spiritus etheris nitrosi	ʒi	30

M. Sig.: To be locally applied.

Tincture of iodin is also recommended by the author, and when piles are the cause the unguentum gallæ will relieve the itching. Zinc oxid is best applied as follows:

B. Zinci oxidi	ʒii	8
Liq. petrolati	ʒii	8
Olei olivæ	ʒss	15
Aquæ calcis	ʒss	15

M. Fiat unguentum. Sig.: Apply locally.

As an antiseptic mercury is the best, applied in the form of the oleate and combined with morphin. The mild chlorid of mercury is advised combined as follows:

B. Hydrarg. chloridi mitis	ʒss	2
Liq. petrolati	ʒi	30

M. Fiat unguentum. Sig.: To be applied locally.

Lotio nigra is frequently used to relieve the itching and to effect a cure combined as follows:

B. Lotio nigræ		
Liq. calcis, āā	ʒiv	120
Mucil. tragacanthæ	ʒi	4

M. Sig.: Apply locally.

Another combination recommended by the author is as follows:

B. Hydrarg. perchlor.	gr. ii	12
Glycerini	ʒss	15
Aquæ chloroformi q. s. ad	ʒviii	240

M. Sig.: Apply locally.

Or:

B. Hydrarg. ammoniati	gr. xx	1 30
Adipis benzoatis	ʒi	30

M. Sig.: Apply locally.

As a caustic, silver nitrate is recommended in the following strength:

B. Argent. nitratis	ʒss	2
Spiritus etheris nitrosi	ʒi	30

M. Sig.: To be applied locally on an applicator as a caustic.

The actual cautery is recommended, in some cases, first anesthetizing the patient, and running it lightly over the areas at a white heat. If there is spasmodic tightness of the sphincter the muscle ring may be forcibly dilated. In purely neurotic forms the less local treatment the better it will be for the patient. "Straight talking," as he expresses it, is far better than drugs in this class of patients. Tonics such as quinin or strychnia are also indicated in these neurotic cases.

Medicolegal.

Who "Able" to Pay for Care by Board of Health.—Section 51 of chapter 18 of the Revised Statutes of Maine provides, in substance, that when any person is infected with any disease or sickness dangerous to the public health the local board of health may remove him to a separate house, and there care for him at his charge, "if able." The Supreme Judicial Court of Maine holds, Inhabitants of Greenville vs. Beauto, that such a person is not chargeable with any part of the expense incurred, if he is not able to pay the full amount. Such a person is not chargeable with the expense incurred, if he is not financially able at the time of his discharge, although he was able to labor, and did labor, and afterwards accumulated sufficient money to pay the expense. The phrase "if able" relates to the pecuniary ability of the party at the time the expenses were incurred.

Pretending to Cure Sickness by Removing Evil Spirits.—The Court of General Sessions of Delaware says, in the case of State vs. Durham, that it was claimed on the part of the state that the defendant pretended that a certain Rachel A. Fitzgerald was possessed of an evil spirit, that her sickness was caused by the presence of this evil spirit, and that he alone possessed the power to remove the same, and to heal her disease or cure her of her sickness. The indictment was founded on a statute of that state against pretending to exercise the art of witchcraft, conjuration, fortune-telling, or dealing with spirits, which statute, the court says, is founded in wisdom. The purpose of that statute manifestly is to protect people in certain grades of life from being imposed on by persons pretending to possess a power that they do not have. It is a matter of common experience that persons afflicted with disease rely ofttimes on, or give credit to, persons who claim to be possessed of supernatural powers. Those who are oftenest subject to that imposition are particularly people who are weak, and who are in great stress of sickness; and this law was designed to protect just such people from impostors, if any such there be, who may go around and make pretense of healing or curing through the exercise of supernatural power, which the intelligence and enlightenment of this day utterly denounce and discredit. If the jury believed from the testimony in this case that the defendant did make pretense that he alone had the power to remove these evil spirits and cure Rachel A. Fitzgerald of her sickness by reason of his influence over these spirits, its verdict should be "Guilty." If the defendant was guilty, he ought not to be turned loose. The verdict returned was "Guilty."

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Foundations Required for Opinions as to Sanity.—The Supreme Court of Iowa says, in the case of Stutsman vs. Sharpless, that attention has been directed in previous decisions to the difference between the foundations to be laid for a non-expert's opinion of the sanity and of the insanity of a person under investigation. See Alvord vs. Alvord, 109 Iowa, 113: In re Hull's Will (Iowa) 99 N. W. Rep. 981. The facts on which an opinion that deceased's mind was unsound should appear in their natures somewhat inconsistent with mental soundness, as that the acts or talks of deceased were unnatural or unusual, or such as would not ordinarily be anticipated from a person of his character. In other words, the facts and circumstances must have been such as tended to support the witnesses' conclusion. But the court says that it was only necessary in this case, as already stated, that the circumstances related tended to indicate an unsound mind. Undoubtedly the witness must have enjoyed adequate opportunity of observing the deceased's capacity, but habits of observation, as well as conditions of the subjects of investigation, differ so radically that no general rule as to what character or number of circumstances shall be related before the witness may speak his opinion can be laid down. See Wigmore's Evidence, section 689. Having indicated some facts which tend to support the opinion to be given, the witness should be allowed to express it, and its value, as well as the effect thereon of any explanatory circumstances, as that the condition was produced by a stroke of apoplexy, is for the determination of the jury, rather than the court. It will not do to allow juries to say what facts were material in securing the opinion of a medical expert, and to what extent a variance in the facts would have changed his opinion. The only safe rule is to reject the opinion unless the facts hypothetically stated are established by the evidence. If a portion of the facts are to be eliminated, the witness, and not the jury, should be permitted to estimate the difference this change would effect in the opinion he has expressed.

Failure to Register Prevents Recovery for Services.—The Supreme Court of Georgia says that the only question presented by the record in the case of Murray vs. Williams for adjudication was whether a physician who has registered, as required by the statute, in the county of his former residence in the state of Georgia can, after his removal into another county in the state to reside and practice his profession, recover for professional services rendered by him in the latter county before he has registered therein. The Code provides that: "Every person lawfully engaged in the practice of medicine within this state, before commencing to practice, shall register in the office of the clerk of the Superior Court of the county wherein he resides and is practicing, or intends to commence the practice of medicine, in a book to be kept for the purpose by said clerk, his name, residence and place of birth, together with his authority for practicing medicine, as prescribed in [Chapter 4 of the Political Code of 1895]. The person so registering shall subscribe or verify, by oath or affirmation, before a person duly qualified to administer oaths under the laws of this state, an affidavit containing such facts, and whether such authority is by diploma or license, and the date of the same, and by whom granted, which shall be exhibited to the county clerk before the applicant shall be allowed to register. The county clerk shall receive a fee of 50 cents for each registration, to be paid by the person so registering."—Political Code of 1895, Sec. 1479. "Any such registered physician in this state, who may change his residence from one county into another county in this state, shall register within the clerk's office of the county to which he removes and wherein he intends to reside and to practice medicine, as provided in the preceding section."—Pol. Code 1895, Sec. 1480. "Any person who shall fail to register or who shall practice medicine or surgery in violation of the provisions of the Civil Code, shall be guilty of a misdemeanor."—Penal Code of 1895, Sec. 485. These sections of the Code, the Supreme Court says, are intended to protect the public against incompetent and unqualified practitioners of medicine, and not for raising revenue, and are, therefore, prohibitory. One who practices medicine without having registered as the Code requires can not recover for his services. Clark on Contracts (2d Ed.), Sec. 153. "Even where there is no express provision that the contract for remuneration for services rendered by an unlicensed physician shall be void, still, if the statute imposes a penalty for practicing without having obtained a license, or without having complied with other statutory provisions, the courts will apply the prohibition, and a recovery can not be had for professional services rendered."—22 Am. and Eng. Enc. of Law (2d Ed.), 793. See also in this connection Conley vs. Sims, 71 Ga., 161 and citations. Wherefore, the court holds that a physician who has failed to register in compliance with the provisions of sections 1479 and 1480 of the Political Code of 1895 can not recover for professional services rendered by him, and that the judgment of the trial judge, who decided contrary to the views herein expressed, must be reversed.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.
November 19.

1 The Sphere of Bacteriology. Edwin O. Jordan.
2 *The Postdischarge Mortality Among the Patients of the Adirondack Cottage Sanitarium. Lawrason Brown and E. G. Pope.
3 The Finsen Light, Roentgen Rays and High Frequency Electric Currents in Certain Diseases of the Skin; Another Year's Experience. L. Duncan Bulkley.
4 The After-effects of Hysterectomy on the Nervous System, the General Health and the Sexual Functions. J. Riddle Goffe.
5 *The Treatment of Basedow's Disease, with Report of a Case. O. E. Lademann.
6 *The Treatment of Epithelioma by Means of the Roentgen Ray. George C. Johnston.

2. Postdischarge Mortality.—Brown and Pope emphasize that the real test of the sanatorium treatment is not the immediate but the ultimate result. The mortality among patients discharged in various conditions affords the best method of studying the permanent results of sanatorium treatment. Of those discharged apparently cured, 93 per cent. of the expected living are alive; of the disease arrested, 65 per cent.; of the cases discharged with active symptoms, 23 per cent. The authors found that the death rate among the apparently cured patients is, during the first ten years, about three times the ordinary death rate. The death rate among the patients discharged with the disease arrested increases during the first few years to many times (10 to 15) the normal death rate, but afterward decreases. Nearly half the patients discharged with an active disease from the Adirondack Cottage Sanitarium died in the first two years. Patients between 30 and 40 when discharged apparently cured, seemed to relapse less than younger patients. This tendency is little, if at all, marked among the patients discharged with the disease arrested. Incipient cases seemed to relapse less than the advanced, when both were discharged in the same condition. These data are based on a study of 1,157 patients.

5. Treatment of Basedow's Disease.—In the case reported Lademann made use of the Lanz method of treating this affection—feeding with the milk of thyroidectomized goats. The patient drank three pints daily and in two and a half months her weight increased 15½ lbs.; the pulse rate diminished from 160 to 118; the circumference of the neck diminished 3 cm., and the blood findings improved markedly. The case was an unusually severe one, and surgical interference was beyond question. Therefore, Lademann believes that the result obtained is all the more remarkable. He is convinced that the more severe the disease, the more milk is required to neutralize the poison circulating in the economy as a result of the thyroid cachexia. He suggests the use of desiccated thyroidectomized milk in the form of tablets, as preferable to that in its natural state. He does not, however, regard this treatment as in any way a specific one.

6. Roentgen Ray in Epithelioma.—Johnston divides his cases into two classes: 1. Those in which, owing to location, ex-

tent, metastasis, poor physical condition of the patient, and various other factors, no clinical cure may be expected, and the treatment instituted is solely for the relief of pain, cessation of irritating and offensive discharge, and possible prolongation of the patient's life. 2. Those cases in which the location and extent of the disease are such as to enable a favorable prognosis to be given, and a cure may be reasonably expected to follow proper treatment. The treatment of epithelioma possesses one advantage over the treatment of the various internal malignant growths. The disease being superficial, the effect of treatment can be readily seen and the dosage accurately adjusted to the needs of the case in hand. There is also less danger of autointoxication in the treatment of such growths. Disadvantages are that the majority of these growths are recurrent and that the majority of patients suffering from epithelioma are old, their vitality is low, the reparative power of the tissue is slow, deficient, in some cases absent, their nutrition is below par, their kidneys weak and inadequate, the skin inactive. The average duration in the 44 cases reported by Johnston was 4 years and 8 months. In 4 patients it was 15 years, and 10 years in 2. Of the 44 cases, 10, or 33 per cent., were recurrent; 34, or 77 per cent., were primary. The average number of treatments necessary in each case was 22. In but 3 cases did metastasis occur. Eight patients, or 18 per cent., were benefited; in 3 cases, or 7 per cent., there was recurrence; 30 patients, or 81 per cent., were cured; 3 cases, or 7 per cent., terminated fatally. In the latter cases a cure could not have been expected by any method of treatment. Johnston says that the mistake most commonly made in the treatment of epithelioma is the use of a tube of high penetration and the employment of protective screens. Success in treatment also depends on the ability of the operator to limit metastasis, and the degree of the success achieved will be in direct proportion to the operator's experience, the correctness of his technic, his familiarity with the apparatus, and his ability to distinguish an active from a worthless tube.

Boston Medical and Surgical Journal.

November 17.

7 *The Differential Diagnosis and Treatment of the So-called Rheumatoid Diseases. Joel H. Goldthwait.
8 Arthritis Deformans. R. H. Bradford.
9 *Chronic Joint Disease. Henry Jackson.
10 Chronic Joint Disease at the Massachusetts General Hospital. H. F. Vickery.
11 Rheumatoid Disease in Children. John L. Morse.
12 Types of Rheumatoid Disease. C. F. Painter.

7. **The So-Called Rheumatoid Diseases.**—In this paper Goldthwait classifies these conditions as follows: (1) Chronic villous arthritis or "dry-joint"; (2) atrophic arthritis; (3) hypertrophic arthritis; (4) infectious arthritis, and (5) chronic gout. The article is illustrated by a number of excellent photographs of casts, bones, *x*-ray pictures, and affected members.

9. **Chronic Joint Disease.**—In connection with the treatment Jackson mentions the great help given by properly applied fixation which relieves pain and is instrumental in preventing serious deformity. He urges that inasmuch as the disease is a chronic, depressing, debilitating process similar to tuberculosis, the most nourishing food that can be assimilated must be given in large quantities.

Medical News, New York.

November 10.

13 A Case of Enteric Fever Complicated by Polyuria. J. C. Wilson.
14 Report of the Medical Director of St. Joseph's Sanatorium to the Advisory Board. E. S. Bullock.
15 Feigned Insanity: Malingnancy Revealed by the use of Ether. Charles G. Wagner.
16 A New Case of Chloroma with Leucemia, with a Study of Cases Reported Since 1893. (To be continued.) George Dock and Aldred Scott Warthin.
17 *Complications of Diphtheria; with Suggestions for the Feeding. Medicinal and Hygienic Treatment. Louis Fischer.
18 *Uncinariasis as Seen in North Carolina: Its Frequency, Etiology, Pathologic Significance, Symptoms and Treatment. J. L. Nicholson and Watson S. Rankin.
19 A Case of Pneumomelanosis. Frank I. Given.

17. **Complications of Diphtheria.**—Fischer's paper deals rather with treatment and not with symptomatology. Speaking of antitoxin, he urges the use of large doses, as much as 10,000 units in 24 hours and even more if necessary. Feeding, he says, has an important bearing on the prognosis in malignant diphtheria. As there is a decrease in the quantity of hydrochloric acid secreted, the patient should be given one to five drops of diluted hydrochloric acid after feeding, and if digestion is not improved thereby, peptonized milk should be resorted to. When the usual method of feeding is unsuccessful or when children refuse food, gavage should be remembered. If vomiting is provoked by gavage, the pharynx may be sprayed for several minutes before feeding with a 3 per cent. cocain solution, or rectal feeding can be substituted. He has had some excellent results in the feeding of intubated cases by rectal alimentation when the same was carried out by one who was competent. The rectum and colon are first washed clean by means of soap water. After the feces are washed away, he waits half an hour and then injects two or three ounces of the following:

R. Yolk of egg	1 yolk.
Starch water	2 ounces.
Fairchild's peptonizing powder	1 tube.
Salt	A pinch.

Mix thoroughly and inject slowly into the colon through a funnel to which a soft rubber catheter is attached. These injections may be repeated every four hours.

Attention to the nose is more important in diphtheria than in any other disease. Fischer's rule has been to wash the nose with a weak permanganate of potash solution or normal saline solution even in intubated cases. He advocates nasal washing in every case of diphtheria as a routine measure. Septic infection will persist until the nose is thoroughly cleaned. Elimination of the poison through the bowels is next in importance, and for this purpose Fischer favors calomel, first giving a large dose, this to be followed by repeated small doses. The feeble condition of the heart's action requires active stimulation with whisky, champagne and strychnin. Tincture of musk, in 2 to 5 minim doses every hour, is also valuable. Fischer says the temperature alone is not a sure guide as to the outcome of a case of diphtheria. The heart is the guide, hence a study of the pulse is more important in estimating the prognosis in any given case.

18. **Uncinariasis.**—Nicholson and Rankin have given this study considerable attention and conclude that the mass of evidence obtained favors ground-itch as the most important factor in the transmission of hookworm disease, and that while drinking water and dirt eating are predisposing factors they are not as important as ground-itch. They have noted that in localities where ground-itch is frequent there hookworm disease is also frequent. Where there is no ground-itch there is little or no hookworm disease. Over 99.5 per cent. of 150 cases studied by them gave a history of ground-itch, and in 69 out of 90 cases the history was that ground-itch preceded the development of the other symptoms. In the majority of cases the severity and number of attacks of ground-itch bear a definite relation to the severity of uncinariasis. The disease is definitely associated with the period of life when the child goes barefooted. From this age (3) there is a definite steady increase until the fifteenth year, when there is a decline. Cases are comparatively uncommon beyond the twenty-fifth year, rare beyond 30 and when they do occur are light and nearly always on the decline. When the patient ceases to be troubled with ground-itch it is the rule for improvement to begin. For these reasons the authors feel justified in drawing the conclusion mentioned in the beginning of this abstract.

New York Medical Journal.

November 10.

20 Internal Secretions. William H. Thomson.
21 *Nephrotomy and Ureterotomy for Impacted Ureteral Calculus. Willy Meyer.
22 Primary Nasal Diphtheria: a Plea for Its Early Recognition and a Report of Three Cases. (Concluded.) Anna S. Wilner.
23 Long and Short Methods of Calculating Modified Milks. E. K. Sheimerdine.
24 *Ideal Tent Life for Consumptives. H. Boyd Masten.
25 *Treatment of Diffuse Peritonitis. Joseph A. Blake.
26 Passage of a Tooth Plate Through the Alimentary Tract. M. K. Elmer.
27 *An Improvised Method of Operating for Varicocele. Lucien Lofton.

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21. Impacted Ureteral Calculus.—Meyer's case offered unusual difficulties in the diagnosis, but the stone was finally located positively by means of the *x*-ray and removed through an abdominal ureteral lithotomy. Meyer considers it advisable in all cases where profound septic symptoms, especially a chill and rapid pulse, accompany the always present renal colic, promptly to resort to operative treatment. In the presence of subsiding symptoms he strongly urges removal of the stone or stones during the interval.

24. Ideal Tent Life for Consumptives.—Masten calls attention to a stretch of territory extending across northern New Mexico and southern Colorado which he believes particularly suitable for the establishment of a tent colony for the treatment of consumption. Aside from the climatic conditions prevailing in that particular region, a strong point in its favor is the fact that cattle are seldom affected with tuberculosis. The construction of a model colony is given in detail.

25. Treatment of Diffuse Peritonitis.—The essential factors responsible for the success obtained in the treatment of diffuse peritonitis, Blake believes to be an early operation; a rapid operation, but not necessarily a large incision; the least possible handling of the intestines (if they escape from the wound and cannot be returned they should be emptied through a small enterotomy incision); thorough lavage of the peritoneal cavity; the omission of drainage, when possible, and an after-treatment in which the main features are absolute rest for the alimentary canal and the exhibition of large quantities of fluid. Reference is made by Blake to 51 cases of diffuse peritonitis, comprising 29 cases caused by appendicitis with a mortality of 28.5 per cent.; 5 by typhoid perforation with a mortality of 40 per cent.; 6 cases by perforating ulcers of the stomach or duodenum, with a mortality of 50 per cent.; 1 by perforating ulcer of the ileum with fatal result; 1 by rupture of the jejunum, with recovery; 1 by acute pancreatitis, with recovery, and 8 cases by infection through the fallopian tubes, partly gonorrheal and portly pneumococcus and streptococcus infections, with a mortality of 62 per cent. Deep drainage was employed in 26 cases, with 14 deaths; superficial drainage was employed in 25 cases, with 5 deaths. In a number of cases in which deep drainage was employed the conditions which demanded drainage were the ultimate cause of death.

27. Improvised Varicocele Operation.—Lofton offers the following modifications of the usual varicocele operation: The patient is permitted to assume a semi-recumbent position. The scrotum is grasped with the left hand, the index finger and thumb separating the vas deferens and spermatic artery, that is, placing them on the anterior border of the testicle, while the pampiniform plexus is brought well up against the anterior and upper walls of the scrotum and held there firmly. With a surgeon's ordinary curved needle, three inches in length, armed with a double strand of No. 2 fiddle string, the pouch is pierced at the seat of election and the mass transfixed. The needle penetrates the opposite inner wall of the scrotum, but does not perforate it. With the point of the left index finger the needle is guided so as to slip along the inner wall of the bag, making a half-circuit of the interior lining and over and above the transfixed veins, and is brought out at the original puncture and securely tied to the dangling ends of the external ligature. Caution must be observed in drawing the mass of veins well up against the inside anterior wall of the scrotum. This procedure may, at the same sitting, be repeated from one to three times, at whatever points the surgeon's judgment may dictate. Thus only one opening is made in the scrotum, and when secondary inflammation sets in the mass will be securely welded to the interior wall of the scrotum, bringing about a shortening, which is always to be desired, as 95 per cent. of these cases are accompanied with elongated scrotal tissue. Furthermore, the veins are securely anchored and the patient can continue his business without a day's interruption. Recovery follows in from 25 to 30 days. Complete atrophy generally follows in about six months. Lofton reports only excellent results in 17 cases operated on according to this method.

Medical Record, New York.
November 12.

28 *The Bacteria of the Stomach. E. Faller.
29 *Are There Other Causes of Malaria Than Mosquitoes? Junius L. Powell.
30 *The Rational Reduction and Fixation of Maxillary Fractures. William J. Lederer.
31 *The Study of Sprain and Its Treatment by Massage. Gustaf Norstrom.
32 *Experiments to Determine the Value of Oxygen in Combination with the Different General Anesthesia. James T. Gwathmey.
33 Congenital Absence of Vagina; Operation. A. E. Isaacs.

28. Bacteria of the Stomach.—Palier examined the gastric juice of 13 cases, 3 of cancer, 5 of hypochlorhydria and 5 of hyperchlorhydria. He found that carcinoma ventriculi is characterized bacteriologically by (1) the presence of a bacillus which he calls the "*Vibrio geniculatus ventriculi*," (2) numerous staphylococci, and (3) the absence of fungi. In simple hypochlorhydria the "*Vibrio geniculatus ventriculi*" may be found, but any other micro-organism may also be met with, either alone or in combination with it. In hyperchlorhydria, yeasts and fungi are met with and also occasionally sarcinæ and a small bacillus which is Gram negative, and in cultures discharges an ammoniacal odor. In subacidity of the stomach, with alimentary stasis, he found yeasts, mycelia, and the *Vibrio geniculatus*. He urges that the bacteriologic examination of the stomach contents should become as much a routine work in clinical medicine as is that of the sputum. The gastric juice is obtained by means of the stomach tube, which should previously be sterilized in boiling water. It is preferable to get the sample for examination after some of the stomach contents have already escaped, as one is thus not so liable to get the first part, which may come from the œsophagus. The receptacle containing the sample should be immediately closed, and the examination should be conducted under sterile precautions.

29. Carriers of Malaria.—Powell reports ten cases of tertian, intermittent fever, among the enlisted men at Ft. Hamilton, N. Y. All but three of these cases occurred in the same company, the barracks of which are located on the highest elevation in the post, overlooking a more or less salt marsh and situated but a short distance from the post dumping grounds. They are also near the battery stables. With the exception of a single anopheles, killed by Powell in his own quarters, careful examination of the stagnant water in the vicinity, as well as search throughout the entire post, failed to reveal any mosquitoes that differed from the culex sollicitans or culex pungens. Powell concludes, therefore, that some other unknown factor must be concerned in the transmission of malaria, and that the etiology of the disease is as yet far from being definitely and conclusively settled.

30. Treatment of Maxillary Fractures.—Lederer favors the double interdental splint for the fixation of fractures of the lower jaw. The results obtained by him from the use of this device have been uniformly good. He describes the technic for applying the splint and cites one case of compound multiple maxillary fracture of unusual difficulty to illustrate his method.

31. Massage Treatment of Sprains.—Norstrom sums up his treatment as follows: At the initial stage, in the presence of classical phenomena, including a great deal of pain—effleurage. When the pain has decreased a great deal—friction and passive movements; later, active movements. Walking at the beginning ought not to be permitted. In all sprains of the lower extremities, after every seance, applications of a gauze bandage, a precaution all the more indicated when the patients are allowed to use their legs and to walk. In order to prevent real relapses, as well as to prevent the inflammation becoming chronic, the treatment ought to be continued until complete restitution has taken place.

32. Oxygen in Anesthesia.—Gwathmey has carried out a series of experiments on cats with the different anesthetics in order to determine their relative value when used with air and oxygen, respectively. He found that chloroform and oxygen is more than twice as safe as chloroform and air and is also safer than any of the other general anesthetics with

air. In fact, oxygen increases the value of all anesthetics as regards life, without decreasing their anesthetic effect.

St. Louis Medical Review.
November 29.

34 Evidence, Phylogenetic and Ontogenetic, Bearing on the Functions of the Accessory Sinuses in Man and the Higher Vertebrates. William T. Eckley.
35 *Strictures of the Male Urethra. (Concluded.) A. Ravogli.

35.—See abstract in THE JOURNAL of November 5, page 1409.

Cincinnati Lancet-Clinic.
November 29.

36 Hydrotherapy in Diseases of the Nervous System. Charles W. Hitchcock.
37 *Clinical Experience in the Treatment of Tuberculosis of the Pleura and of Other Serous Cavities, with Report of Cases. James A. Burroughs.

37.—Ibid., November 12, page 1491.

American Journal of Obstetrics, New York.
November.

38 *Retrodeviations of the Uterus; a Résumé of Their Surgery. Walter Blackburn Dorsett.
39 *Antistreptococcus Serum in Puerperal Septicemia and Scarlet Fever. Albert G. Hamilton.
40 *Operative Treatment for Painful Menstruation in Young Virgins. William A. B. Sellman.
41 *Pseudomembranous Monocystic Tubercular Peritonitis. H. W. Longyear.
42 *Chronic Adhesive Peritoneal Sclerosis. N. Stone Scott.
43 *Vaginal Cesarean Section in Grave Cases of Puerperal Eclampsia. J. H. Carstens.
44 *Purulent Cystitis with Symptomatology Resembling Appendicitis. Magnus A. Tate.
45 *Gunshot Wound of the Abdomen—Report of a Case; Eighteen Perforations—Intestinal Resection (5 ft. 7 in.); with Murphy Button—Recovery. John D. S. Davis.
46 *The Relative Value of the Means and Methods Employed in Accouchement Forcé. E. Gustav Elsha.
47 *Some Clinical Reasons for Advising Early Operations for Fibroid Tumors of the Uterus. Rufus B. Hall.
48 *Shall We Remove All Fibromata of the Uterus on Diagnosis? Thomas B. Eastman.
49 *Removal by Vaginal Cystotomy of Skeleton of Fetopic Fetus Ulcerating into Bladder. William D. Haggard.
50 *Report of a Case of Strangulated Umbilical Hernia in Which Cæcum, Appendix, Ascending and Transverse Colon were Found Gangrenous in Sac—Artificial Anus Made at Primary Operation, Followed Ten Weeks Later by Double Resection to Restore Intestinal Continuity. John Young Brown.
51 *Sterility Depending on Retrodisplaced Uteri, and Relief by the Alexander Operation, with Report of Twelve Subsequent Pregnancies. Herman E. Hayd.
52 *Unique Case of Circumscribed Infection of the Placenta and Excessive Vomiting; with Remarks About Hyperemesis Gravidarum. A. Goldspohn.
53 Advantage of Limiting Artificial Interference in Obstetric Practice. Augustus P. Clarke.

38.—Ibid., October 8, page 1080.

39. Antistreptococcus Serum in Puerperal Septicemia and Scarlatina.—Hamilton reports a few selected cases which serve to illustrate the unmistakably beneficent action of antistreptococcus serum in conditions produced solely, or in large part, by the streptococcus. To obtain good results from the serum, Hamilton urges that the following points must be observed: The disease must be due to the streptococcus alone or this micro-organism must be decidedly predominant, depending solely on the microscope as evidence. The serum must be administered early, or as soon as the origin of the disease is known. The quantity administered must be sufficient to produce a perceptible change in 12 hours and must be repeated as often as indications demand. About 30 c.c. should be given for the first dose, and repeated in 12 hours at the furthest, and kept up until benefit is derived, the dose being gradually diminished. Hamilton says that this interferes in no way with other treatment, such as stimulation, and the treatment of any particular symptom. The serum used should be known to be of standard strength. No bad effects were noted from the use of the serum in the treatment of puerperal septicemia and scarlet fever. In mixed infections it may be used as an adjunct to other methods, but its success is not so striking.

40 to 46.—See abstract in THE JOURNAL of October 1, pages 998 to 1,000.

47 to 52.—Ibid., October 8, pages 1079 to 1081.

Bulletin of the Johns Hopkins Hospital, Baltimore.
November.

54 *An Early Case of Ulcer of the Stomach. Joseph C. Bloodgood.
55 The Use of the Cystoscope in Cases of Prostatic Hypertrophy. Hugh H. Young.
56 *Clinical Effects of Surgical Anesthesia and of Operations on Anemic Patients. Henry T. Hutchins.
57 Contribution to the Study of Cystinuria. Charles H. Simon and D. G. J. Campbell.

54. Ulcer of the Stomach.—A case of single ulcer located in the lesser curvature, 4 cm. from the pylorus, was reported by Bloodgood because of the short duration of the symptoms, three weeks, and the difficulty in making a positive diagnosis at the exploratory operation. Although the gross appearance and the findings on palpation were in favor of ulcer, Bloodgood considered that there was sufficient doubt to justify a complete operation. A resection was done in the ordinary manner. In closing the stomach and in performing the end-to-end anastomosis between the stomach and duodenum, two rows of sutures were employed, continuous catgut passing through all the walls, reinforced by interrupted mattress sutures of fine black silk. The patient made an uneventful and rapid recovery. Bloodgood says that if the indurated tumor is either freely movable or only slightly adherent, complete resection should be performed. This operation gives the only hope for cancer, and as these patients are usually in good condition the mortality for gastrectomy, if it is an ulcer, should be but little, if any, greater than for gastroenterostomy. If the indurated tumor is adherent to surrounding structures and it is a carcinoma, it is past the hope of complete removal. For this reason gastroenterostomy should be performed. If the lesion is an ulcer there will be permanent relief. He urges that physicians should secure a more positive differential diagnosis between ulcer and cancer in its earlier stages by the chemical study of gastric secretion. The problem of the surgeon is the differential diagnosis between the ulcer and cancer at the exploratory operation.

56. Clinical Effects of Anesthesia on Anemia.—Hutchins studied this question in the case of 60 women, each showing a hemoglobin percentage of 50 or less, who received a general anesthetic for operative purposes, the duration of the anesthesia varying from twenty minutes to three and a half hours. Fifty-six of the 60 cases had uneventful recoveries. There were 4 fatalities. Severe heart lesions complicated two of these; in the third the patient had already bled until her hemoglobin registered 15 per cent., and in the fourth case the anesthetic had been given for two and a half hours before the patient showed any signs of immediate collapse. Only 2 cases died on the table under the anesthetic. The worst shocked patient was one with a hemoglobin percentage of 50, on whom an ordinary suspension of the uterus and repair of relaxed vaginal outlet were performed, the operation consuming an hour and seven minutes. The patients, as a rule, took the anesthetic well. No respiratory distress was noted, and in neither of the cases dying on the table was respiratory failure primarily the cause of death. In no case, says Hutchins, was it thought that the persistence of the anemia after operation was in any way prolonged by the giving of the anesthetic. Preliminary tonic treatment proved of value in raising the hemoglobin percentage in the 6 cases in which it was tried.

Brooklyn Medical Journal.
November.

58 Symptoms of Nephritis. L. L. Nichols.
59 Should the Normal Appendix Be Removed When the Abdomen Is Opened for Other Reasons? O. A. Gordon.
60 *A Brief Report of Eight Cases of Cerebrospinal Fever, with Special Reference to Their Treatment with Ergot. Carroll Chase.
61 Treatment of Malignant Growths by X-ray. C. E. Wells.
62 The Sphygmomanometer and Its Relation to Chronic Diseases of Heart, Arteries and Kidneys. Charles L. Fincke.
63 Some Points in the Diagnosis and Treatment of Pneumonia. John R. Stivers.
64 Two Unusual Cases of Head Injury. Calvin F. Barbour.

60. Ergot in Cerebrospinal Fever.—Chase reports several cases of epidemic cerebrospinal meningitis in which he made use of ergot in the form of ergotin (Bonjean). He gave it internally in all cases except where hypodermic medication was necessary because of vomiting. In these cases Squibb's solid extract, dissolved in water, was used. In an adult the dose was on the average 3 gr. of ergotin (equivalent to about 30 grains of ergot) every hour, although double that amount was given on occasions. The extract was given in about similar

doses hypodermically, although not so often. Children received proportionate doses. Although carefully watched for, no evidence of poisoning was noticed. The drug was never given for long periods without intermission. The effect was usually seen in from twenty-four to forty-eight hours, and consisted in a gradual remission of all the symptoms, especially those directly due to intracranial and spinal congestion. The intense pain became more bearable. The retraction of the head less marked, hyperesthesia not so noticeable, the fever, still irregular, did not average as high, and in general, the patient became more comfortable. Two markedly noticeable features of Chase's cases were absence of the usual complications (pneumonia in particular), and absence of troublesome sequelæ. The recovery in each case was complete—no deafness, no impairment of vision, and none of the persistent severe headache that is so apt to make the lives of those who recover unbearable.

Chicago Medical Recorder.
November.

65 Tubes in Trauma. Charles Louis Mix.
66 Elastic Tension in Plaster-of-Paris Casts. A. B. Wiener.
67 *The Early Diagnosis and Treatment of Pneumonia in Infants. W. P. Northrup.
68 *Examination of the Rectum. Charles J. Drueck.
69 Duty of the General Practitioner to the Public as a Physician. J. Allen Patton.
70 The General Practitioner a Politician. George De Tarnowsky.
71 Some Practical Phases of the Tuberculosis Question. J. W. Pettit.
72 Secondary Uterine Hemorrhage. Albert R. Martin.
73 The Local Treatment of Gonorrhœa. W. A. Hackett.
74 A Case of Tubo-ovarian Abscess on the Left Side, Pyosalpinx and Ovarian Cyst on the Right Side, with Perforation of the Left Tubo-ovarian Abscess into the Ovarian Cyst. Heliodor Schiller.

67. **Pneumonia in Infants.**—As important symptoms to aid in making a diagnosis of pneumonia in infants, Northrup mentions: 1, Sudden onset; with fever and torpor; 2, disturbed respiration—pulse ratio; 3, râles. Speaking of the treatment, he advises careful regulation of the functions of the gastrointestinal tract in order to avoid flatulence, fermentation and to correct indigestion; plenty of water, in small quantities, cool and fresh, both inside and outside; quiet and rest. One of the most refreshing and helpful external applications is cold to the head. The application of cold cloths, wrung dry and frequently replaced on the forehead, with sponging of the face and lips with cold water, soothe and comfort the patient, thus promoting sleep. It is more effective than an ice cap, as this may not reach the scalp at all if the hair is thick. However, says Northrup, cold is applicable only to sthenic cases. Finally, he continues, the patient should have plenty of fresh, cool, flowing, outdoor air, as nothing stimulates the heart better than a current of fresh cool air on the face. For a limping respiration, a narrowed lung capacity, a sore breathing apparatus, nothing is so efficient as air. It also quiets restlessness, favors sleep, improves secretions and digestion, in short, meets most of the indications for the treatment of pneumonia in infants. No matter how cold the air may be no fear need be entertained that the patient will "catch cold," especially from air striking on the oval of the face alone.

68. —This article has appeared elsewhere. See THE JOURNAL, xli, title 142, page 618.

Indiana Medical Journal, Indianapolis.
November.

75 *Certain Associated Disorders of the Hepatic and Pancreatic Ducts and Upper Small Intestine and Their Treatment by Drainage of the Gall Bladder. Thomas B. Eastman.

75. **Treatment of Diseases of Hepatic and Pancreatic Ducts.**—Eastman emphasizes the importance of the intimate relation between the ducts of the liver, of the pancreas, and of the second portion of the duodenum, and to consider their etiologic influence on certain digestive disorders commonly referred to as dyspepsia, intestinal indigestion and the like. Eastman says that the pancreas is more frequently involved in disease than is generally credited; it is rarely the seat of primary diseases and it is nearly always infected through its anatomic relations with the gall ducts, and the treatment, without question, consists in drainage of the gall bladder and the removal of gallstones, if they be found.

University of Pennsylvania Medical Bulletin, Philadelphia.
October.

76 Motives in Medicine. John H. Musser.
77 *The Functions of the Tonsils. George Bacon Wood.
78 Outitis Deformans. DeForest Willard and W. H. Andrus.
79 Disease of the Nails Accompanied by Arthritis of the Distal Joints of the Fingers and Toes. M. B. Hartzell.
80 A Cystic Papillomatous Ependymoma of the Choroid Plexus of the Lateral Cerebral Ventricle. A Contribution to the Classification of Gliomata. D. J. McCarthy.
81 Cholesteatoma Vasculosa of the Choroid Plexus of the Lateral Cerebral Ventricle. D. J. McCarthy.

77. **Functions of the Tonsils.**—Wood presents the results of his research into the functions of the tonsil, and they may be summarized as follows: 1. That the epithelium of the crypts by a mytotic division of its cells exhibits a marked tendency toward constant growth. This is shown by the penetration of the epithelial cells into the parenchyma of the tonsil and the formation of teratoid masses in the lumen of the crypt. 2. That the theory of the migration of lymphoid cells from the secondary follicles into the crypts does not satisfactorily explain the presence and character of the cells in the interepithelial spaces. 3. That there exist transitional cells by which all stages may be traced between the epithelial cell and the lymphocyte. 4. That the variation in types of the lymphocyte is most marked in the region of the cryptal epithelium. 5. That the degree of infiltration of the epithelium holds no relation to the cryptal contents. On the other hand, the ingrowing sprouts of epithelium possessing no lumen show as much, if not more, infiltration than the true crypts. 6. That the complete destruction of the cryptal epithelium is a very rare occurrence, almost always a sufficient number of epithelial cells being left to provide an intact barrier along the surface toward the cryptal lumen. The thought that the epithelial lining of the tonsillar crypts may be converted into cells that are generally supposed to be of connective tissue origin is not one to be accepted lightly. It suggests the possibility of the interchange of cell types; that no distinct line can be drawn between the epithelial cells, connective tissue cells and endothelial cells. Wood believes himself justified in saying that the tonsil is a primogenetic source of leucocytes, and that it is possible that all adenoid tissue which has developed in intimate relation with epithelium is playing a rôle very similar to that which he accords the tonsils.

Journal of Infectious Diseases, Chicago.
November.

82 The Life-history of Trypanosoma Lewisi and Trypanosoma Brucei. Ward J. MacNeal.
83 Pathologic Anatomy of Experimental Nagana. Frederick A. Baldwin.
84 *The Blood in Measles. Wilder Tilliston.
85 The Reduction of Methylene Blue by Nervous Tissue. H. T. Ricketts.
86 The Antagonism Exhibited by Certain Saprophytic Bacteria Against the Bacillus Typhosis Gaffky. Wm. D. Frost.
87 *The Longevity of the Typhoid Bacillus in Water. E. O. Jordan, H. L. Russell and F. R. Zeit.
88 The Question of Virulence Among the So-called Pseudo-Diphtheria Bacilli. Alice Hamilton.
89 *Experimental Streptococcus Arthritis in Relation to the Etiology of Acute Articular Rheumatism. Rufus I. Cole.

84. **Blood in Measles.**—Tilliston made repeated examinations of the blood in 28 cases of measles and found that during the incubation period of the disease a leucocytosis is present, which begins soon after infection, reaches its maximum six days before the appearance of the eruption, and lasts into the first part of the stage of invasion. During the latter part of the stage of invasion and during the stage of eruption the white count is normal, or more usually diminished, reaching its lowest point at the height of the rash. The presence of leucocytosis points to the existence of a complication; its absence during the eruptive stage does not exclude one. The onset of leucocytosis with a complication may be preceded by a rise in the percentage of neutrophiles or a failure on their part to decrease at the proper time. The differential count in measles Tilliston found to take the following definite course: The polynuclearneutrophiles are increased during the stage of incubation, invasion and eruption, fall below normal at defervescence and reach normal in convalescence. Myelocytes are often present in small numbers during the period of eruption, especially in young children. The lymphocytes follow the opposite course—at first decreased, and increased after the crisis. The large mononuclear and transitional cells (including large

lymphocytes) are normal at first and increase later. The eosinophiles are decreased or absent during the eruption, and later increased. The mast cells show no changes; the blood plates are usually decreased during the eruption. The blood becomes normal in all respects at about the twelfth day. In doubtful cases the absence of leucocytosis with decreased eosinophiles is in favor of the diagnosis of measles as against scarlatina and vice versa. The blood of measles in children shows the same changes as in adults, if the differences between the normal blood of children and that of adults be taken into consideration.

87. Longevity of Typhoid Bacillus.—The writers of this paper state that they were requested by the sanitary district of Chicago in the fall of 1903 to conduct some experiments on the life of the typhoid bacillus from the waters of Lake Michigan, the Chicago Drainage Canal and the Illinois River. From the experiments recorded in the paper it appears that under conditions that probably closely simulate those in nature, the vast majority of typhoid bacilli introduced into the several waters studied perish within three to four days. The authors state that it is theoretically possible that specially resistant cells may occur which are able to withstand for a longer period the hostile influences evidently present in water. Their experiments, however, show that if such resistant individuals exist they must be very few in number and constitute only a small fraction of the bacilli originally entering the water. But they do not claim that the behavior of typhoid bacilli under the conditions described by them is representative of all conditions obtaining in all natural bodies of water.

89. Experimental Streptococcus Arthritis.—While making a series of cultures of cases of acute rheumatic fever and endocarditis Cole succeeded in cultivating a streptococcus from the blood of a patient, the autopsy on whom disclosed an acute and subacute vegetative mitral and aortic endocarditis, cardiac hypertrophy and dilatation, chronic passive congestion of the internal viscera, multiple infarction of spleen and kidneys, thrombosis of left middle cerebral artery, with extensive softening of the internal capsule. The results obtained by inoculation of this streptococcus agreed quite closely with those obtained by other observers with inoculation of the so-called "*Micrococcus rheumaticus.*" Cole then undertook experiments with six races of streptococci aside from those obtained from the case mentioned. The sources of these various races were: Peritonitis following carcinoma of the stomach; puerperal fever autopsy; blood during life in terminal septicemia following myocarditis; empyema; blood during life in septicemia following appendicitis; scarlet fever adenitis. There was no essential difference in the results obtained between the several races studied, except in the virulence. With all seven races studied, intravenous inoculation of amounts insufficient to cause death of the animals within six or seven days lead to the production of mild grades of arthritis. In many cases the joint affection is so mild that unless one is especially interested in looking for it, it might be overlooked. It seems that when streptococci from whatever source are inoculated intravenously into a rabbit, they tend early to localize in the joints even before any definite lesions can be detected. Cole concludes that arthritis and endocarditis may be produced by the intravenous inoculation of rabbits with streptococci from various sources, and the results obtained are quite similar to those described as resulting from the inoculation of the so-called "micrococcus" or "*Diplococcus rheumaticus.*" Therefore, the description of a distinct variety or species of streptococci based on this property of causing endocarditis and arthritis is unwarranted. Whether the evidence is sufficient to show that acute rheumatic fever is simply a form of streptococcus septicemia, Cole does not say.

Archives of Pediatrics, New York.
November.

90 Should Bicarbonate of Soda Be Added to an Infant's Food as a Routine Measure? Godfrey R. Pisek.

Virginia Medical Semi-Monthly, Richmond.
November 11.

92 *Loss of Consciousness and Automatism in Inebriety. T. D. Crothers.

93 Theories of Serum Therapy. Charles R. Grandy.
94 Antitoxic Serum-therapy. John S. Davis.
95 Infantile Convulsions. B. W. Rawlen.

92.—See abstract in THE JOURNAL of October 22, page 1251.

New York State Journal of Medicine, New York.
November.

96 *President's Address. New York State Medical Association. William H. Thornton.
97 *Conservatism Versus Intervention in Simple Dystocia. William J. Mayer.

96.—Ibid, October 29, page 1329.
97.—Ibid., November 5, page 1409.

Woman's Medical Journal, Toledo, Ohio.
October.

98 A Case of Headache. Mary E. Beaten.
99 Xiphopagus, Report of Case. Clara Gray.

Medical Fortnightly, St. Louis.
November 15.

100 *A Plea for Wider Knowledge Concerning Diseases Which Affect the Joints. C. Travis Drennen.
101 *A Study of the Mental Disorders of Adolescence. Frank P. Norbury.

100.—Ibid., October 29, page 1326.
101.—Ibid., November 12, page 1491.

Kentucky Medical Journal, Louisville.
November.

102 Surgical Aspect of Brights Disease. J. Garland Sherrill.
103 Ectopic Gestation with Report of a Case. J. M. Salmon.
104 Two Cases of Typhoid Fever with Suppurating Parotid Glands. Walter Byrne.
105 Keratitis. A. L. Bust.
106 Cysts of the Pancreas. P. C. Layne.
107 Some Interesting Cases. Basil M. Taylor.
108 Empyema in Country Practice. D. G. Simmons.

Pennsylvania Medical Journal, Athens.
October.

109 Address of the President, Medical Society of the State of Pennsylvania. Wm. B. Ulrich.
110 *The Physician and the State. Benjamin Lee.
111 Personal Recollections of Doctors John L. and Washington L. Atlee. Benjamin H. Detwiler.
113 *Indicanuria Complicating Typhoid Fever. Judson Daland.

110-113.—Ibid., October 15, page 1162.

The Post-Graduate, New York.
November.

114 The Urine as an Index to Metabolism and its Disturbances. William Henry Porter.
115 The Mastoid Operation. James F. McKernon.
116 Adhesive Plaster Dressings to Support the Abdominal Viscera. Walter Nic. Cleaves.
117 Circumscribing Gastrodiaphane. Robert Coleman Kemp.

Cleveland Medical Journal.
November.

118 A Report of Six Cases of Calculus in the Pelvic Portion of the Ureter. George Emerson Brewer.
119 The Opening of the Tuberculosis Dispensary in Cleveland. John H. Lowman.
120 The Rheumatoid Diseases. Henry O. Feiss.
121 Report of a Case of Cesarean Section for Placenta Previa. R. B. Bloch.
122 Hydrocele of the Canal of Nuck. Eliot Alden.

Maryland Medical Journal, Baltimore.
November.

123 Treatment of Acute and Chronic Nephritis, with Some Remarks Concerning the Edebohls Operation. A. Duval Atkinson.
124 The Etiology of Prostatic Hypertrophy. John W. Churchman.

Alabama Medical Journal, Birmingham.
October.

125 Thoughts on Typhoid Fever. R. C. Bankston.
126 Enemas in the Treatment of Fevers. Hugh Boyd.

Medical Age, Detroit.
November 25.

127 Hydrotherapy in Diseases of the Nervous System. Charles W. Hitchcock.
128 Suggestive Therapeutics as Practiced by a Surgeon. Bayard Holmes.

Denver Medical Times.
November.

129 Ectopic Pregnancy with Report of a Case of Repeated Tubal Gestation. A. W. Kerr.
130 Vomiting in Tuberculosis. Daniel S. Neuman.
131 Normal Obstetrics. Duration of Pregnancy and the Prediction of the Date of Labor, and the Period of Pregnancy. T. Mitchell Burns.
132 Shock, General, Nervous and Surgical. George C. Stemen.

American Medical Compend, Toledo.
November.

133 What Should Be the Attitude of the State and the Medical Profession Toward the Individual Suffering from Tuberculosis? Wm. A. Dicker.
134 A Résumé of 100 Abdominal Operations. J. H. Jacobson.
135 Granular Lids—Some General Facts. Mark D. Stevenson.
136 Respiratory Tract. Arthur B. Smith.

Illinois Medical Journal, Springfield.
November.

137 Practical Points in Abdominal Surgery—Peritonitis. Bayard Holmes.
138 Treatment of Pneumonia. Charles J. Whalen.
139 Prescriptions vs. Single Remedies. William F. Waugh.
140 Report of the Associated Charities of Peoria on "The Prevalence of Tuberculosis in Peoria." S. M. Miller.
141 Atonic Dilatation of the Stomach with Report of Cases; Also Methods of Treatment. Milton H. Mack.
142 Acute Infantile Middle-ear Inflammation. Willis O. Nance.
143 The Scientific Struggle to Cure Pulmonary Tuberculosis in the United States Since 1882. Homer M. Thomas.
144 Empyema. J. Herbert Franklin.
145 Comparative Effects of Small-caliber High-velocity Bullets with Bullets of Large Caliber and Low Velocity. Howard Crutcher.

Medical Herald, St. Joseph, Mo.
November.

146 Chronic Bright's Disease. T. B. Bogart.
147 Gastroptosis. J. M. Bell.
148 President's Address, Medical Society of the Missouri Valley. A. D. Wilkinson.
149 Recurrent Dislocation of Shoulder Joint. A. I. MacKinnon.
150 Temperature: Its Significance and Treatment. A. R. King.
151 Treatment of Prolapsus of Rectum. A. C. Stockes.
152 Hallux Valgus. A. L. Wright.
153 Office Treatment of Hemorrhoids. W. J. McGill.

American Practitioner and News, Louisville, Ky.
October 15.

154 Gonorrhea of the Prostate. Victor N. Meddis.
155 Spontaneous Fracture of the Ribs, with Report of Case. Hugh D. Redmond.
156 Prophylaxis. Charles Mohr.

Ophthalmic Record, Chicago.
October.

157 Retinal Hemorrhage as the First Manifestation in a Case of Diabetes. C. S. G. Nagel.
158 A Case of Foreign Body Within the Orbit with Penetration of the Cranial Cavity. Edward P. Morrow.
159 Glaucoma or Primary Optic Atrophy? J. A. White.
160 A New Lacrymal Syringe. John E. Kirkendall.
161 Ectropion Relieved by Excision of the Tarsus. Report of a Case. Thomas Faith.
162 A Few Words Regarding the "Tucking" Operation on the Recti Muscles. Francis Valk.
163 An Investigation of the Blind Department of the Chicago Public School System. L. P. Campbell.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.
November 12.

1 *The Artificial Maturation of Immature Senile Cataract by Trituration, After the Method of Förster, as Practiced During Twenty Years. Malcolm M. McHardy.
2 Discussion on Intraocular Hemorrhage and Systemic Disease. A. Hill Griffith.
3 Remarks on the Diagnosis and Treatment of Glaucoma. G. A. Berry.
4 Operative Treatment of High Myopia. W. Adams Frost.
5 A Case of Congenital Word Blindness. James Hinshelwood.
6 Case of Word Blindness, with Right Homonymous Hemianopsia. James Hinshelwood and Alaster MacPhail.
7 The Lymph Follicles in (Apparently) Healthy Conjunctivæ. N. Bishop Harman.
8 Notes on a Case of Thrombosis of the Cavernous Sinus Due to Empyema of the Sphenoidal Sinus. Adolph Bronner.
9 Case in Which Ovarian Tumor Was Simulated by Lymphangioma of Omentum and Peritoneum. John B. Heiller.
10 Carcinoma of the Cervix Complicating Pregnancy and Labor. John M. Munn Kerr.
11 Notes on Three Cases of Ectopic Gestation. Ewen J. MacLean.

1. Artificial Maturation of Immature Cataract.—McHardy states that complete ripening of immature senile cataracts may be safely and almost certainly secured in from three days to eight weeks by preliminary iridectomy, with trituration of the lens through the cornea and pupil, if it is done with judgment, experience and care. The ultimate results, surgical and visual, of extraction operations in such cases are quite equal to the results of similar operations for senile cataracts which have been allowed to fully mature spontaneously. Further, the removal of such artificially matured cataracts is entirely free from those risks, drawbacks, and often impaired ultimate results which follow from the removal of immature senile cataracts. The procedure was originated by Foerster. McHardy has practiced it for about twenty years with the most satisfactory results. The method is as follows: The pupil is widely dilated with a four grains to the ounce solution of sulphate of atropin, applied twice in the preceding twelve hours. Cocain is used for anesthesia. McHardy usually does a preliminary iridectomy on both eyes, triturating only one. Having done a preliminary iridectomy, he lets the aqueous humor escape from the wound by depressing its posterior lip with the edge of a spoon, and then, wetting the back of the shell or silver spoon with the patient's tears, applies its convex surface to the center of the cornea, stroking the cornea in a radiating direction, at first very carefully, observing that the iris always slips away in front of each stroke of the spoon. That is to say, as the cornea goes down against the lens, the iris recedes from the center towards the periphery, before the pressure of the spoon. A nipping of the iris between the lens and the cornea often is followed by iritis. It is to be remembered that one may do an enormous amount of rubbing on the front of the cornea, but without ripening the cataract—if there be a fair quantity of aqueous humor in the chamber. The amount of trituration to be done depends (1) on the amount of cortex that requires to be rendered opaque; (2) on the character of the cornea. If the cornea is one of those nice-looking, stand-up corneæ a good deal of trituration is required; if not, exceedingly little trituration is sufficient. After the trituration atropin is to be used, within thirty-six hours, to keep the pupil widely dilated. This method renders it important that the patient should be very accessible. McHardy makes use of it in all cases of immature senile cataract with greatly hampered vision and with uniformly successful results.

The Lancet, London.
November 12.

12 English Medicine in the Anglo-Norman Period. Joseph Frank Payne.
13 Social Evolution and Public Health. Arthur Newsholme.
14 Paralysis as It Occurs in Children. James Taylor.
15 *Case of Carcinoma of the Appendix. Charles J. Cullingworth and Edred M. Corner.
16 Inflammation of the Muscles, with Special Reference to Two Cases of Infective Myositis. John Hill Abram.
17 Treatment of Obstructed Labor When Caused by the Impaction of a Tumor in the Pelvis, Illustrated by Four Cases. Thomas H. Morse.
18 *Case of Exophthalmos in the Newly Born. Hugh Howie Borland.

15. Carcinoma of the Appendix.—Cullingworth's patient, a woman, aged 31, suffered for some time from uterine trouble, for which she was curetted. Six months before her admission to the hospital she was operated on for hemorrhoids. Two months later she had a second attack of pain in the right side which lasted two hours and caused her to faint. After a fortnight's interval she had a similar but less severe attack. The pain was over the right iliac fossa, low down. On deep palpation in the right iliac region the patient complained of a little tenderness at a point midway between the umbilicus and the anterior superior spine of the ilium. The right kidney was found to be movable. Per vaginam there was a hard mass to the right of the uterus depressing the vaginal fornix. This mass was about the size of a pigeon's egg, and was thought to be either a solid tumor of the ovary or a subperitoneal fibroid burrowing into the broad ligament. On opening the abdomen the tumor was found to be a small fibromyoma of the right broad ligament, close to but not directly connected with the uterus. After its enucleation the appendix was examined. It was found to have only a few omental adhesions and to be apparently healthy, except that at the extreme tip it was thickened and bulbous. It was on this account removed. On opening it the mucous membrane was seen to be somewhat thickened at its end, and the lumen of the tube was obliterated at the tip by a little nodule which had the appearance of caseous material, though somewhat harder. Sections showed that this little nodule was a spheroidal-celled carcinoma. Three years after the operation the patient was still free from a recurrence.

18. Exophthalmos in Newborn.—Borland reports a case of bilateral exophthalmos in a child, the vault of whose cranium showed evidence of protracted pressure and presented a perfectly flattened-out, squashed appearance; the frontal and parietal bones, while not overlapping, were practically at right angles. The child's face was pallid, and both eyes protruded to such a degree that the sclera was seen above and below the cornea and the eyelids were unable to meet. There was no ptosis. The pupils were equal and fully dilated. The child is still alive, strong and healthy in every way and is now 3 years of age.

Dublin Medical Journal of Medical Science.

October 1.

19 *The Use of the X-rays as an Aid to the Early Diagnosis of Pulmonary Tuberculosis. A. Stanley Green.
20 The Attitude of Our Profession Toward the Educational Questions in These Countries. R. B. McVittie.

19. X-Rays in the Diagnosis of Pulmonary Tuberculosis.—Green points out that if physicians will remember that a diagnosis of any condition can not be made by one single method of examination, but that advantage must be taken of all other aids, particularly history, symptoms, and physical signs, the *x*-rays will be found as valuable in the diagnosis of early tubercular deposit in the lungs as the ophthalmoscope is in the diagnosis of many diseases. Apart from ethical reasons, he says that it is very important that this work should remain in the hands of medical men, and not be given over to chemists and photographers. The screen examination, to which he attaches considerable importance, is carried out with the patient lying on a table with a vellum top and with a tube placed in a box beneath, which is movable in both directions, or else standing up about eighteen inches from the tube, with the surface of the anode parallel to the greatest transverse diameter of the chest. It is absolutely necessary for the patient to be stripped to the waist and the room kept at a suitable temperature. The light in the tube must be under perfect control, so that the penetration of the tissues may be buried at will. The first point to notice is the position and movements of the diaphragm on the two sides. The patient should then be asked to take a deep inspiration followed by a full expiratory movement. The excursion of the diaphragm is again measured. The patient must then be examined with the screen on the chest and the tube at the back, to ascertain the height and movements of the diaphragm as seen from the front. Other conditions which can be noted in the screen examination are the slope of the ribs and the width of the intercostal spaces; the position and shape of the heart, shadows and opacities in the lung, and the effect of deep inspiratory movements on these—a very important point. In a few cases small opacities can be seen in the mediastinum suggestive of enlarged and perhaps calcareous glands. Unilateral limitation of movement of the diaphragm is the earliest sign of pulmonary tuberculosis, and in no case which Green examined where this sign was noted (in the absence of a history of pleurisy), has he failed to find deposits in the lungs, either then or later. Furthermore, if the history and symptoms are taken into consideration the movements of the diaphragm may be taken as a measure of the activity of the disease. Fluid in the pleural cavities can also be detected easily by a screen examination. The shadow cast by a purulent effusion is much more dense than that of a serous effusion, obscuring the shadow of the ribs, which can be seen through a serous effusion. It is also possible to say whether air is present in addition to fluid or not. In the former case the upper level of the shadow in the erect position is horizontal, while in the latter, under the same conditions, the shadow has the form of a concavity, the sides of which are prolonged upward for a considerable distance. Green uses a 10-inch coil so arranged that when necessary to go to the patient's house it can be worked by one 6-volt accumulator and the Charpentier-Gaiffe interrupter, which will admit a variation of current of from 2 to 10 amperes, and at the same time permit of the use of a 230-volt current through a Wodal jet interrupter in the consulting room. In the former case the exposure necessary to give a good skiagram of an adult thorax varies from two to three minutes, whereas in the latter thirty to sixty seconds is ample to give a good definition, the tube being placed from twenty to twenty-four inches from the plate, the anode being on the level with the third or fourth rib. In some cases he uses a separate plate for each lung; in others, only one plate for both lungs. The back to plate method is used in every case. Sometimes he exposes the plate while the patient holds his breath after a deep inspiration, cutting off the light as soon as the second inspiration is necessary. This means three or four periods of exposure to bring up the requisite time. Rapid plates, which will stand long development without fogging, are essential. Where cavities are suspected it is important to take one skiagram and then, after the patient has coughed and expectorated, to expose another plate. In this way the cavities, being emptied, will be seen as light areas in an opacity; in the first skiagram the opacity would be more homogeneous.

Presse Médicale, Paris.

Last indexed page 1705.

21 (No. 82.) Arthropathies des hémophiles. A. Broca.
22 *Le traitement antiseptique des brûlures. Mme. Nageotte-Wilbouchewitch.
23 (No. 83.) *Hématuries des néphrites. J. Albarran.
24 *L'anesthésie chirurgicale par injection sous-arachnoïdienne de stovaïne. L. Kendirdjy and R. Berthaux.
25 (No. 85.) Règles opératoires pour la guérison de la méningite purulente aigue généralisée. M. Lermoyez and L. Bellin.

22. Rational Treatment of Burns.—Nageotte is so impressed with the necessity for surgical cleansing of the burned surface that she is credited with scrubbing it. She restricts the scrubbing to the sound skin around, but cleanses the burned surface with soap, applying it on a non-absorbent compress, under chloroform. Anesthesia is necessary, especially for children and burns of the face. The subjects rouse from the chloroform free from all pain and thus continue to complete healing, whatever the dressing applied. Families should learn to treat a burn like a wound of any kind, cover immediately with a clean cloth or first-aid dressing. The gauze can be saturated then with a 1 per cent. solution of picric acid. This emergency dressing should not be disturbed until the physician is ready to cleanse the burned area, preferably in a hospital or operating room. She describes a case of a severe vitriol burn over the entire face, neck and part of the arms. The burned surface was covered at once with compresses dipped in ammoniated water. The entire burned surface was cleansed by a surgeon an hour later, with soap, rinsed with bichlorid and dressed with dry iodoform gauze. The dressing was not disturbed until the ninth day, when the eschars were found as dry scabs adherent to the gauze and only the magnifying glass revealed that the apparently normal skin was less smooth than before. There was no suppuration except at a few points where the skin had been scratched in the struggle.

23. Hematuria in Nephritis.—Albarran accepts the idea that the inflammation in the kidney in Bright's disease is merely one manifestation of a primal, a more general, affection. This affection involves other organs and other systems, but the kidney is invariably affected and secondarily causes other disturbances. These phenomena secondary to the kidney disturbances superposed on the general affection, explain why an apparently insignificant alteration in the kidney may give rise to copious and persisting hematuria. The same is observed at times in cases of tuberculosis and cancer of the kidney. Some trifling lesion in the kidney may cause a disturbance in the blood vessels and thus secondarily induce hematuria with or without an angioneurotic reflex action. This mechanism explains why any surgical intervention on the kidney is liable to arrest the hemorrhage by breaking the angioneurotic chain. Simple exploration of the kidney, nephrotomy, decapsulation, any of these is liable to cure the hematuria, but not the underlying general and kidney affection. The operation produces a series of vascular and nervous modifications in the parts which puts an end to the hematuria.

24. Spinal Stovainization.—The Journal has mentioned recently the advantages of a new anesthetic put forward in France, stovain. Kendirdjy reports a series of 64 operations undertaken with spinal anesthesia induced by injection of a 4 per cent. solution of stovain in physiologic salt solution. In the entire series there was not a trace of any by-effects. There was no nausea or vomiting, no mishaps of any kind, and microscopic examination of the cerebrospinal fluid afterward showed it anatomically the same as before the stovainization. The anesthesia was as perfect as with cocainization, to say the least, and it lasted forty minutes on an average. The injections were made in the second lumbar space, and the operations included a number of radical cures of hernia, resection of the scrotum, excision of hemorrhoids with dilatation of the sphincter, epididymectomies and amputation of the penis. There was slight headache in one case, but the headache had been observed before the operation. In the only other

case in which headache was noted afterward the patient was a syphilitic with roseola. The intermittent character of the headache and the absence of any other symptoms that could be ascribed to the anesthetic render its syphilitic nature almost certain.

Revue de Gynecologie, Paris.

Last indexed page 84.

26 (VIII, No. 3.) Utérus didelphe dont le gauche ne communique ni avec le vagin ni avec l'utérus droit. Le Dec.
27 *Traitement du cancer utérin. Resultats op. Immédiats et éloignés des interventions totales. Duret and A. Besson.
28 Etude des kystes papillaires et des tumeurs papillaires des ovaires. R. Ponzi.
29 Torsion du pédicule des tumeurs solides de l'ovaire. F. Jayle and X. Bender.
30 Epiploite herniaire avec torsion intrasacculaire du pédicule. P. Mauclaire.
31 Report of French Congress of Gynecology, April, 1904.
32 (No. 4.) Du l'emploi du sérum de cheval chauffé contre les infections en chirurgie abdominal (hot horse serum). R. Petit.
33 *Hystérectomie et infection puerpérale algue. C. Cristeanu.

27. **Uterine Cancer and Remote Results.**—Duret and Besson remark that 104 out of 173 cases of cancer at the Lille hospitals, 1891 to 1903, proved to be inoperable. About 38 per cent. of the 69 operated on survived more than two years. The mortality after laparotomy was 88 per cent. during the first year, while it was only 38 per cent. after vaginal removal of the cancer. In advanced cases, with much general debility, any radical operation is contraindicated, as the general health never recuperates and the subject does not survive the year. Palliative measures are best in such circumstances.

32. **Hot Horse Serum and Surgical Infections.**—Petit relates the details of 15 laparotomies in which he used hot horse serum to combat infection. There was only a single death due to the infection for which the operation was undertaken. The cases were all extremely grave, and the benefit from the serum was marked. The patients all felt better, the pulse was good, respiration normal, expression tranquil and tongue moist. No ill effects were observed, and he is convinced that the measure may prove very useful in the clinic to enhance the natural resistance to infection and reduce the number of deaths from peritonitis. After the toilet of the peritoneum he drains the vaginal and abdominal wounds and pours about 30 gm. of hot horse serum into the pelvis. He gives the details of all his cases thus treated. The thermometer sometimes shows a slight rise in temperature, but it is transient.

33. **Hysterectomy for Acute Puerperal Infection.**—The balance sheet of this intervention is made out by Cristeanu in a comprehensive monograph. The mortality is much higher than that of other modes of treatment. Only a single instance is known of a favorable termination to uncomplicated, acute, puerperal infection without localization treated by hysterectomy. In the 80 cases on record the cures reported were all of some more or less manifest complication.

Semaine Médicale, Paris.

34-38 (XXIV, No. 44.) *Report of Fourteenth Italian Congress of Internal Medicine, Oct. 24-27, 1904.
39-46 *Report of Seventh French Congress of Internal Medicine, Oct. 24-27, 1904. (Commenced in No. 43.)
47 *Diazo-Reaction in Pulmonary Tuberculosis. M. I. Holmgren. Abstract.
48 *Applications of Adrenalin Against Eczema. G. A. Weill. Abstract.
49 *Iodin in Epidural and Intravenous Injections Against Tuberculous Cerebrospinal Meningitis. A. Rossini. Abstract.

34. **Fevers of Unknown Origin.**—Bozzolo classifies in nine groups the various types of a prolonged febrile state for which none of the ordinary causes can be discovered. One group includes ulcerative endocarditis, another the affections whose localizations do not appear until late and then in the glands. Group 4 includes the febrile state that precedes the discovery of a cancer. In a case recently observed a tumor in the kidney was first revealed by fever; hematuria did not appear for three months later. Group 5 includes the febrile state noted in old syphilitics. It is rebellious to quinin but yields to iodid. Group 6, the nervous and hysteric febrile states, very rare in men. Group 7 is the large class of bacteriemias and septicemias without localization or only at a tardy stage. The fever has no invariable specific type, but the streptococcus usually induces a fever with exacerbations, while the pneumococcus and the typhoid and tubercle bacilli cause a more continuous, remittent febrile condition. Intravenous injections of quinin or other drugs are of only transient benefit. The prospects are promising for treatment of these septicemias by vaccination with attenuated cultures or intravenous administration of specific serums. The other groups are those of "tuberculous typhoid" and Malta fever. The tuberculous septicemia may be absolutely primary, the entire lesion being restricted to the vascular system. Maragliano advises intravenous injections of sublimate in dubious cases of prolonged fever. De Renzi has derived great benefit in Malta fever from change of air and 4 to 8 capsules of ichthyol a day. The latter acts so effectually that he tries it as a diagnostic measure in many cases. Lucibelli of Naples described the case of a woman of 39 who for eleven years has suffered from weakness, constipation, swelling of the left knee and fever. No treatment has had any effect on the condition. No parasites can be found in the blood; the proportion of leucocytes is as 1 to 60; lymphocytes, 15 per cent.; mononuclears, 5 per cent.; polynuclears, 80 per cent., and no mast cells. The source of the fever is still a mystery.

35. **Physico-Chemistry in Relation to Clinical Medicine.**—Ceconi terminated his address with the remark that the latest researches and discoveries, far from detracting from the value of the "vitalist theory," supply more solid foundations for it, as they show that physics and chemistry are totally unable to explain the vital processes. When the freezing point of the blood is normal, it is a sign that the kidney is functionally capable, but only on condition that the composition of the blood is normal. He regards cryoscopy as of little if any value for the diagnosis of unilateral kidney affections. It varies for the cerebrospinal fluid to such an extent that a low freezing point can not be regarded as necessarily pathologic.

36. **Nephrotoxic and Hemolytic Action of the Kidney.**—De Renzi ligated the pedicle of one kidney in 15 dogs. The results observed indicate that kidney tissue is able to cause hemoglobinuria.

37. **Radiotherapy of Leukemia.**—Colombo treated 3 cases of leukemia with the Röntgen rays. At first the symptoms were aggravated, but then marked improvement followed. The course comprised 120 to 150 exposures of forty minutes each, ten given to the sternum, ten for the spleen, ten for the elbows and ten for the knees.

38. **Serum Diagnosis of Tuberculosis.**—Marzagalli announces that 2 drops of blood serum added to 8 drops of a filtered emulsion of tubercle bacilli will give the precipitation reaction in case of tuberculosis. He prepares the emulsion by triturating in the presence of distilled water the tubercle bacilli previously rinsed with cold water.

39. **Mercurial Injections.**—In the discussion that followed the address on this subject, Fournier observed that the method of mercurial injections has established its usefulness, but should not be stretched to apply to tabes and general paralysis. He has never witnessed a cure of the latter, although he has injected calomel to an amount of .1 gm. once or twice a week. Injection of large doses of calomel once a week has sometimes displayed almost miraculous efficacy in his experience, but only in cases of phagedena, tuberculous syphilids, gummatous laryngitis, inveterate plantar or palmar psoriasis and syphilitic affections of the tongue.

40. **Obesity.**—Maurel's address emphasized the fact that most of the symptoms attributed to the obesity are in reality due to the same primal cause. Treatment should aim to reduce the weight to the standard proportion for the height. The number of calories required by the organism varies according to the season, the age and the sex, and this point must be borne in mind in reducing the intake of food. The nitrogenous ingredients should be taken according to the normal dietary and the reduction should be exclusively in the fat-producing foods, the "ternary nutrients." The patient must be supervised to watch that the urine is never less than 15 gm. per kilogram of weight, that is, about a quarter of an ounce to the

pound. The treatment should be kept up for six months at least, with frequent intermissions, the latter to favor the recession of the skin. Læven of Paris believes that dyspepsia is the rule in excessive corpulence, and that the latter will right itself when the dyspepsia is conquered by appropriate treatment.

41. **Psychic Localizations.**—Grasset, in his address, suggested the classification of the psychic functions into three groups, the sensory-motor psychic functions, the inferior—involuntary and automatic—and the superior—voluntary and conscient. He thinks that this classification will promote the study of psychic localizations much better than grouping by faculties.

42. **Senile Gangrene.**—Verhoogen of Brussels treats incipient gangrene with the iodids to widen the arteries, giving about .2 gm. of the active substance a day for months without interruption. Hypodermic injections of the alkaline nitrites, in the dose of .05 gm., are also efficient. They can be kept up for several months without ill effects. As a tonic for the heart he gives the preference to theobromin, 1 or 2 gm. a day, also continued for several months. It can be associated with .5 to 1 gm. of caffein a day. When gangrene is once established he disinfects with a 1 per 1,000 solution of potassium permanganate, followed by the permanent application of fresh hydrogen dioxid. Brissaud stated that when the arterial lesion is located high up, as for instance at the bifurcation of the aorta or in the iliac, surgical intervention is the only resource and should be prompt and thorough. The cause is not inevitably atheroma. In one case he found at the necropsy a clot entirely obstructing the lumen, due solely to intense angioplasm. Neurasthenics are extremely subject to the latter. The state of the liver and kidney is an important factor in the pathogenesis of gangrene. When these organs are intact atheroma is not followed by gangrene.

43. **Buttermilk in Gastroenteritis.**—Decherf of Tourcoing reported that infants with severe gastrointestinal troubles improved to a remarkable extent when put on buttermilk. In 22 cases of acute gastroenteritis, including 8 very severe ones, all the children recovered rapidly, as also 3 adults with mucomembranous enterocolitis and a large number of children with chronic gastrointestinal troubles. The toxi-infectious symptoms vanished in the acute cases in less than twenty-four hours.

44. **Orthostatic Albuminuria.**—Teissier distinguishes between the residual post-infectious albuminuria, the associated forms and the true variety. Linossier believes that standing has a great influence on the functioning of the kidney at nearly all times.

45. **Treatment of Writer's Cramp.**—Ballet emphasized the fact that this condition is of cortical origin and requires psychic re-education.

46. **Fatal Anasarca After Saline Infusion.**—Sorel reported the case of an infant suffering from severe enterocolitis. The intestinal symptoms were improved by irrigation of the intestines, with saline solution, but, simultaneously, diffuse edema developed, rapidly fatal.

47. **Diazoreaction in Prognosis of Tuberculosis.**—Holmgren's experience has been that when the reaction was intense the subject succumbed within two months. When it was less marked or dubious, the subject lived six to eighteen months, and a negative reaction was always followed by long survival.

48. **Adrenalin in Eczema.**—Weill of Paris was able to cure a rebellious, recurring patch of eczema on his hand with adrenalin. He applied 5 or 6 drops of the 1 per 1,000 solution, and after it had dried a little starch glycerolate was applied and dusted with equal parts of starch and zinc oxid. This was repeated six to eight times a day at first and then only morning and evening. By the end of the second week the patch had healed and recurrences have been promptly aborted by the same.

49. **Epidural Iodized Injections in Meningitis.**—Mauclaire has treated Pott's disease successfully with epidural injections of iodoformed oil, and Rossini now reports excellent results in a case of tuberculous cerebrospinal meningitis. The patient was a lad of 16 and the disease was subacute and not influenced by any of the usual measures. He then withdrew 1 to 5 c.c. of cerebrospinal fluid and injected into the subarachnoid space the same quantity of 1 per cent. iodoformed oil. He repeated the procedure every six hours, inserting the needle at different points. As an adjuvant he injected into a vein every second day 1 c.c. of a solution of 1 gm. iodin and 4 gm. potassium iodid in 100 gm. water. The temperature declined the day after this treatment was instituted; diuresis was re-established and improvement progressively continued. After the fifth day the cerebrospinal fluid was always sterile as demonstrated by inoculations which had been positive before.

Mitteilungen a. d. Grenzgebieten, Jena.

Last indexed page 1281.

50 (XIII, Nos. 4-5.) *Diagnostische und therapeutische Bedeutung der Lumbal-Punktion. D. Gerhardt.

51 *Primäre Tuberkulose der Milz (of spleen). J. Bayer.

52 *New Standpoints for Judgment of Ether Narcosis.—Neue Gesichtspunkte in der Beurtellung der Aethernarkose. G. Engelhardt.

53 *Ueber idiopathischen, protrahierten Priapismus. C. Goebel.

54 *Lymphogene und hämatogene Eiterungen bei Pneumonie (suppurations). A. Bloch.

55 Erfahrungen über Serum-Behandlung der Diphtherie. M. Cohn.

56 *Totale Ausschaltung des Dickdarmes bei Colitis ulcerosa (exclusion of large intestine). L. Moszkowicz.

57 *Ueber "Tuberkulide" und disseminierte Haut-Tuberkulosen. F. Jellinberg.

58 *Experimentelle Studien zur Steigerung der Widerstandskraft der Gewebe gegen Infektion (to enhance resisting power to infection). H. Miyake.

59 Zur Kenntnis des Banti'schen Symptom-Komplexes. J. Lomen.

60 *Serious Hemorrhage from Kidneys.—Massenblutungen aus gesunden und Kranken Nieren. R. Stich.

61 *Die Hirn-Punktion (puncture of brain and meninges through intact skull). E. Neisser and K. Pollack.

62 *Ueber peptische Geschwüre des Jejunums nach Gastroenterostomie. M. Tiegel.

50. **Lumbar Puncture.**—Gerhardt regards lumbar puncture as a valuable diagnostic aid in meningitis. Bacteriologic and cytologic examination and determination of the albumin content of the cerebrospinal fluid not only reveal the meningitis but disclose its nature in most cases. In acute febrile diseases, especially typhoid, grippe and pneumonia, it differentiates the cerebral symptoms from suppurative meningitis, and also excludes suppuration in serous meningitis. Normal behavior of the cerebrospinal fluid in otogenic brain processes testifies to the integrity of the meninges. The most important information derived from lumbar puncture is when headache or vague cerebral symptoms are the only clinical indications of trouble, but anatomic changes in the cerebrospinal fluid confirm the probability of a syphilitic origin. Cytology and determination of the albumin will aid in the differentiation of paralysis from other forms of dementia and the liquor psychoses. Lumbar puncture has contributed to explain the bacterial etiology of acute myelitis, and possibly also of spinal paralysis. Another point learned from it is that the fluid is not always under excessive pressure in uremia. From the therapeutic point of view, lumbar puncture has proved useful in serous meningitis, in the headaches of chlorosis, in acute and chronic hydrocephalus and in meningeal apoplexy. In tuberculous meningitis and with brain tumors, very little relief has been obtained, although in exceptional cases some of the symptoms subsided. Some physicians have reported great improvement in epidemic and in otitic meningitis after lumbar puncture; Mya in 3 cases of suppurative meningitis with influenza bacilli, and Bertelsmann an otogenic suppurative meningitis cured by lumbar puncture. Little benefit is derived in chronic affections, with the exception of the severe headaches in secondary and tertiary lues. These have yielded to lumbar puncture in many instances after having long been refractory to all other measures. Brain tumors contraindicate lumbar puncture except with the greatest precautions. With this exception, lumbar puncture is not followed by evil results in any case. The article is based on both personal experience and study of the literature.

51. **Primary Tuberculosis of Spleen.**—Bayer adds another to the 6 cases on record in which primary tuberculosis of the spleen was diagnosed and completely cured by removal of the spleen. In 2 others on record the operation proved inef-

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fectual to arrest the tuberculous process. In 19 other cases the tuberculosis was not found until after death. The tuberculin test or exploratory laparotomy is indicated when primary tuberculosis of the spleen is suspected in the presence of tumefaction, hyperglobulia and cyanosis. Prompt removal of the affected organ is the only treatment.

52. **New Views of Ether Narcosis.**—Engelhardt relates the results of considerable experimental research and clinical experience in regard to the influence of ether on the blood. The melting point of the red corpuscles and the point at which the albumin in the red corpuscles coagulates afford reliable data for determining injurious action of a narcotic on the blood. Further study of this subject is needed.

53. **Idiopathic Persistent Priapism.**—The condition in the case described lasted for eight weeks, when relief was obtained by an operation. The trouble was evidently due to thrombosis in the corpora cavernosa, and complete *restitutio ad integrum* followed an incision and evacuation of the clots. Goebel reviews 2 cases of leukemic priapism. In one, white thrombosis of the corpora cavernosa of penis and urethra was discovered at the necropsy. In the other case there were repeated attacks of priapism, and an operation revealed a deposit of putrefied blood containing the colon bacillus. In certain other cases on record the trouble was due to pyemic thrombosis of the corpora cavernosa, but in 9 others no cause could be discovered for the priapism. It is probable that in every protracted case there is some distension of the corpora cavernosa by an accumulation of blood, with consecutive thrombosis. The blood can easily be evacuated by a small, absolutely harmless incision, although there is a possibility that the clots may be absorbed in time.

54. **Suppuration in Pneumonia.**—Bloch describes a case of multiple suppurative metastasis, by the way of the lymphatics, in pneumonia. He also reviews 29 articles that have been published on the subject. His conclusions are to the effect that metastasis by way of the lymphatics has a favorable prognosis if prompt radical operative treatment is practicable, and if no vital organs are involved and there is no true pneumococcus pyemia. Metastasis by the blood route requires a general predisposition, such as is afforded by debility from some recent infectious disease, the rapid growth of the young or a congenital tendency. A local predisposition, induced by trauma, articular rheumatism or gout, is also necessary. The prognosis is doubtful on account of the danger of secondary pyemia.

56. **Total Exclusion of Large Intestine in Colitis Ulcerosa.**—Implantation of the ileum in the anus offers the best prospects for operative treatment of the severer cases of ulcerative colitis. Moszkowicz describes the technic he has worked out on animals with successful results in regard to tolerance, continence, etc. The operation is as simple as ordinary colostomy.

57. **Tuberculides.**—The chief importance of the benign exanthemata, known as tuberculides, lies in their affording a clue to a tuberculous internal process. They are always secondary, and can be classified in 2 groups, those belonging to the category of lichen or acne scrofulosorum, and those with necrosis, including the folliclis, nodular tuberculides and erythema indurativa with flat infiltrates. They are probably due to the action of the tuberculous toxin alone. Five pages of bibliographic references accompany the article which is based on this literature and the material at Neisser's clinic at Breslau.

58. **To Enhance Resisting Power to Infection.**—Miyake's experiments to increase resistance to infectious processes were numerous and varied. His final conclusion has already been announced in these columns, page 1267. It is to the effect that subcutaneous injection of nucleic acid has a remarkable effect in summoning the leucocytes to the spot, and reducing the danger from operative intervention. The dose for an adult is 50 c.c. of a 2 per cent. neutralized solution of yeast nucleinic acid. The .5 per cent. solution is preferable, but as this requires 200 c.c. of fluid, the more concentrated solution is generally used. No by-effects were ever noticed in the 38 cases in which Mikulicz had used it at date of writing.

60. **Hemorrhage from the Kidneys.**—Stich relates 4 cases of severe and prolonged hemorrhage from the kidneys, in one of which the necropsy revealed diffuse chronic parenchymatous and interstitial nephritis in one kidney while the other was normal. In another case the kidney was incised for assumed nephrolithiasis. No stone was found, but the hemorrhages were arrested. They recurred again four years later, but were conquered by repeated subcutaneous injections of gelatin. Suggestion and hydrotherapy have arrested the hemorrhage in some cases on record. An ice bag may be useful to supplement gelatin injections. If the symptoms persist a week or so, uninfluenced by these measures, an exploratory incision is indicated.

61. **Puncture of the Brain.**—In Neisser and Pollack's experience with 138 punctures through the intact skull there was no arterial hemorrhage in a single instance. They ascribe their success to their technic which they minutely describe. They also review the anatomy of the parts and summarize their clinical results. They found the measure extremely valuable from a diagnostic point of view, and also for evacuation of pathologic fluids.

62. **Peptic Ulcers in Jejunum.**—Tiegel reports 6 cases observed at Mikulicz' clinic, and summarizes 16 already published. The peptic ulcer in the jejunum may run a latent course to perforation or it may cause severe trouble from the start. It has a great tendency to recur. It has been noted hitherto only after gastroenterostomy on account of some non-malignant gastric affection. The subjects are almost invariably males. Prolonged internal treatment, as for gastric ulcer, offers better prospects for a cure than surgery, except in case of perforation. It seems better to prefer posterior to anterior gastroenterostomy, with transverse fixation of the loop, or better still, to substitute a pyloroplastic operation or gastroduodenostomy. In prophylaxis, alkalies and careful dieting should be the rule after a gastroenterostomy for a benign stomach affection. The ulcer is generally referable to the peptic action of the gastric juice superadded to disturbances in the circulation (arteriosclerosis), lesions of the mucosa or an individual predisposition.

Münchener medicinische Wochenschrift.

63 (LI, No. 42.) Morphologische Veränderungen der roten Blutkörperchen durch inaktiviertes, spezifisch lytisches Blut-Serum (hemolysis). R. Rössle.
64 *Ueber Simulation von Geistesstörung (insanity). A. Schott.
65 *Zur Pathogenese der Narkosen-Lähmung (paralysis). E. Glittsch.
66 *Ueber Lungen-Sequester. K. Büdinger.
67 Indirekte Fraktur an den Köpfchen der Metatarsal-Knochen. M. Schwarzschild.
68 Zur Entstehung der Dekubital-Geschwüre im Pharynx. C. Müller.
69 *Holder for Nursing Bottle.—Ein Milchflaschenhalter. A. Mayer (Freiburg).
70 Wire Netting Plaster Dressing.—Ueber Drahtgipsbindenverbände. Gebele.
71 (No. 43.) Ueber einen Befund von protozoen-artigen Gebilden in den Organen eines hereditär-luetischen Foetus. Jeslonek and Kiolemenoglou.
72 Zur Bakteriologie der Noma. A. Hofmann and E. Küster.
73 *Cause, Prevention and Serum Diagnosis of Cancer in Digestive Tract.—Die Ursache, die Verhütung und die Blutserum-Diagnose der Magen- und Darmkrebse. G. Kolling.
74 Fall von Torsion des Samenstranges (of spermatic cord). E. Grunert.
75 Ueber unvollständige Torsionen des Samenstranges mit spontanem Rückgang (incomplete torsion of spermatic cord). H. Mohr.
76 *Ueber graphische Fixierung physikalischer Befunde. H. v. Krannhals.
77 Eitrige Peritonitis im Anschlusse an akute Tonsillitis. H. Künzel.
78 *New Mode of Local Application of Heat: Jute Dressings.—Ueber Jute-Files-Verbände. O. Langemak.
79 Asthma-Kuren mit Geheim-Mitteln und Patent-Medizinen. G. Avellis.

64. **Simulation of Insanity.**—Schott emphasizes the necessity for caution in certifying to feigned insanity as the simulation may co-exist with true mental disturbance. It is frequently one manifestation of the latter. All subjects suspected of simulation should be placed for observation in some psychiatric clinic or asylum. The assumption of pure simulation is justified only when evidence of the mental soundness of the individual is forthcoming.

65. **Narcosis Paralysis.**—Commenting on a serious case in his own experience, Glitsch remarks that it is advisable to change the position of the arms from time to time during protracted operations, to avoid post-operative paralysis. If the victim should appeal to the courts, the judge might easily assume some carelessness on the part of the operator in case of severe paralysis of this kind. Glitsch thinks that probably more cases occur than are published.

66. **Lung Sequester.**—Büdinger relates that a man of 40 exhibited symptoms suggesting typhoid fever, but the temperature persisted high, and by the fifth week he began to cough and suddenly indications of a large abscess in the lung developed. An operation disclosed a foreign-body suppuration in the lung which had resulted in the casting off of a sequester of the lung as large as a man's fist. It floated on water, and presented histologic evidence of pneumonic infiltration. The most striking features of the case were the sudden development of physical findings suggesting a large cavity in the lungs and the small amount of expectoration under the circumstances.

69. **Nursing Bottle Holder.**—A small standard is screwed to the edge of the bed or baby wagon. It terminates above in a spiral spring on which is mounted a broad half ring in which the bottle fits tight. The bottle is thus held horizontally at the proper height, and the flexible spring allows it to follow every movement of the child's head. The child can also drop the nipple, taking it again at will, the same as the natural nipple. The bottle is kept from contact with the bedding, etc. The contrivance is shown in an illustration.

73. **Foreign Embryonal Cells as a Cause of Cancer.**—Kelling's previous announcements in regard to the cause of cancer in the digestive tract were summarized in an editorial on page 269. He here relates further experiences which have apparently corroborated his former assertions and suggest both an effectual mode of diagnosis and prophylaxis of malignant growths. He has found that it is possible to induce cancer in dogs at will by inoculating them with embryonal cells from pigs' uteri or from hen's eggs. Old dogs are the best adapted for the purpose, and the liver and the testicles are the organs most predisposed to malignant growth. The inoculation is best made between the sheets of the mesentery, which enables the substance to find its way better into the glands and retroperitoneal tissue. The cancerous nodules which developed in the liver or testicles after such inoculation of hen or pig embryos in dogs showed the microscopic findings characteristic of cancerous growths, and the most careful search failed to reveal any other malignant growth in the dogs when killed fifty to a hundred days afterward. The biologic precipitin test was always positive for the specific albumin used, and was negative for albumin from other sources. This biologic test was also positive for hen's albumin in 9 cases of cancer from the human digestive tract. He accepts this as evidence that these cancers resulted from ingestion of raw eggs. In 13 others the results were negative for hen or pig embryonal elements but, of course, the possible sources for embryonal inoculation in the digestive tract are legion. It is also possible that the specific reaction might have been obtained at some previous stage of the cancer. He was able to group certain kinds of cancers by the serum biologic test, finding that certain groups gave certain specific reactions. In one group, for instance, a sarcoma of the human ovary, a teratoma of the testicle, a mammary cancer and one on a dog, all induced intense precipitation of the albumin in a prepared serum obtained by injecting rabbits with human mammary cancer substance. They also all induced intense precipitation in a prepared serum obtained by injecting rabbits with embryonal albumin from the pig. In 2 other cases of inoperable gastric and rectal carcinoma, the serum of the patients gave a positive response to the biologic test with embryonal pig cells, with which also the history of the cases harmonized. In 15 further cases of cancer of the digestive tract precipitins for hen albumin were found in 8 and for pig albumin in 2. This specific reaction was so intense and unmistakable that in a dubious case of apparent gastric catarrh he advised an operation for cancer merely on the basis of this reaction, and advised against it for the same reason in other cases. The operation or the course of the affection confirmed his diagnosis in every instance. The reaction is more intense the younger the subject, and it is most instructive in cases of beginning scirrhus. In some cancer subjects there is no formation of precipitins, and he has sought to influence inoperable growths by inducing the precipitin formation by injection of the prepared animal serum. In the prophylaxis of cancer, the ingestion of live embryonal cells should be avoided, especially by subjects with catarrhal or other changes in the mucous lining of the digestive tract. The uteri of animals slaughtered for food should be destroyed, and no raw meat or raw eggs should be eaten. Kelling has sought to destroy the germinal area in eggs by some means which would not injure the looks or taste of the egg. If a fresh egg is laid horizontal the germinal vesicle usually rises to the top and a current of electricity sent perpendicularly through the egg will destroy all life in the germinal area. Such prophylactic measures offer prospects for successful extermination of cancer. Many of our younger physicians may live to see the day when cancer has become a pathologic rarity among civilized peoples.

76. **Graphic Fixation of Physical Findings.**—Krannhals writes to express his satisfaction with the Curschmann method of graphic notation of the physical findings in examining patients. The findings are marked on the skin of the patient and certain of the landmarks are also marked. A sheet of transparent paper is then laid over the skin and the marks below are traced on the paper.

78. **Jute Dressings for Local Application of Heat.**—Application of superheated air is necessarily a more or less transient process. The results are better when the heat is applied more permanently, and especially when the parts are exercised at the same time. Langemak says that a thick dressing of jute under oiled silk fulfills all these conditions. He has been applying it in his practice with the greatest satisfaction. The jute can be obtained for a trifle at any saddlery or upholsterer's shop, and holds the heat better than anything else. He has found it particularly useful to apply after removal of the hot air oven. The only drawback is the size of the dressing, as the layer of jute must be several inches thick. He sometimes applies it at night only; in severe cases he leaves the dressing undisturbed for several days. The indications are the same as for superheated air. The thermometer shows that the parts under the jute are kept at a constant temperature of about 104 F.

Books Received.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

MENTAL DEFECTIVES: THEIR HISTORY, TREATMENT AND TRAINING. By Martin W. Barr, M.D., Chief Physician Pennsylvania Training School for Feeble-minded Children, Elwyn, Pa. Illustrated by 53 Full-page Plates. Cloth. Pp. 368. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co. 1904.

OUTLINES OF PHYSIOLOGICAL CHEMISTRY. By S. P. Beebe, Ph.D., Physiological Chemist to the Huntington Fund for Cancer Research, and R. H. Buxton, M.D., Professor of Experimental Pathology, Cornell Medical College. Cloth. Pp. 195. Price, $1.50. New York: The Macmillan Co. 1904.

MANUAL OF SERUM DIAGNOSIS. By Dr. O. Rostoski, University of Wurzburg. Authorized Translation by Charles Bolduan. First Edition. First Thousand. Cloth. Pp. 96. New York: John Wiley & Sons. London: Chapman and Hall, Ltd. 1904.

MEDICAL LABORATORY METHODS AND TESTS. By Herbert French, M.A., M.D. (Oxon.), M.R.C.P. (Lond.), Medical Registrar Guy's Hospital. Cloth. Pp. 152. Price, $1.50 net. Chicago: W. T. Keener & Co. 1904.

TRANSACTIONS OF THE INDIANA STATE MEDICAL ASSOCIATION, 1904. Fifty-fifth Annual Session Held in Indianapolis, May 19-20, 1904. Cloth. Pp. 496. Indianapolis, Wm. R. Burford. 1904.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION, 1904. Volume XX. Cloth. Pp. 292. Philadelphia: Printed for the Association. 1904.

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